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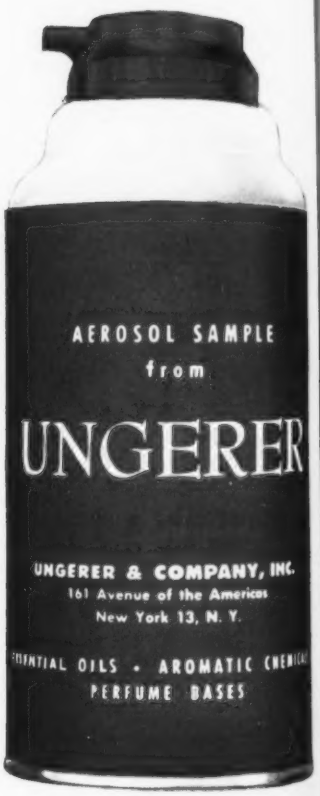

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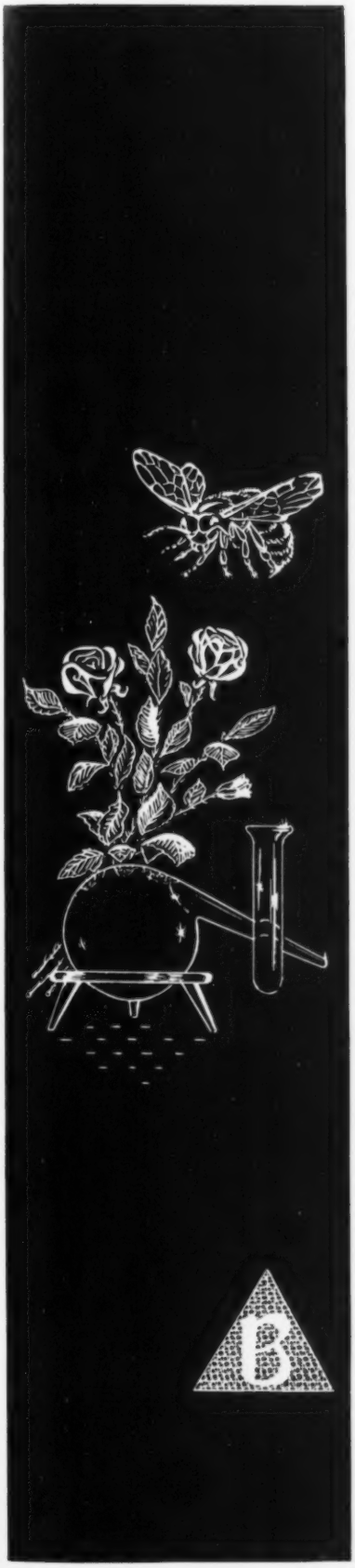

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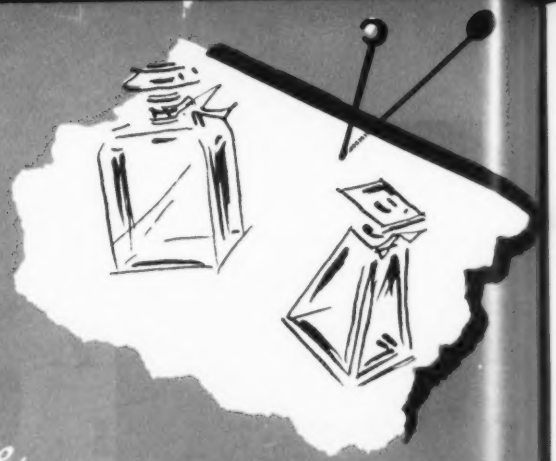

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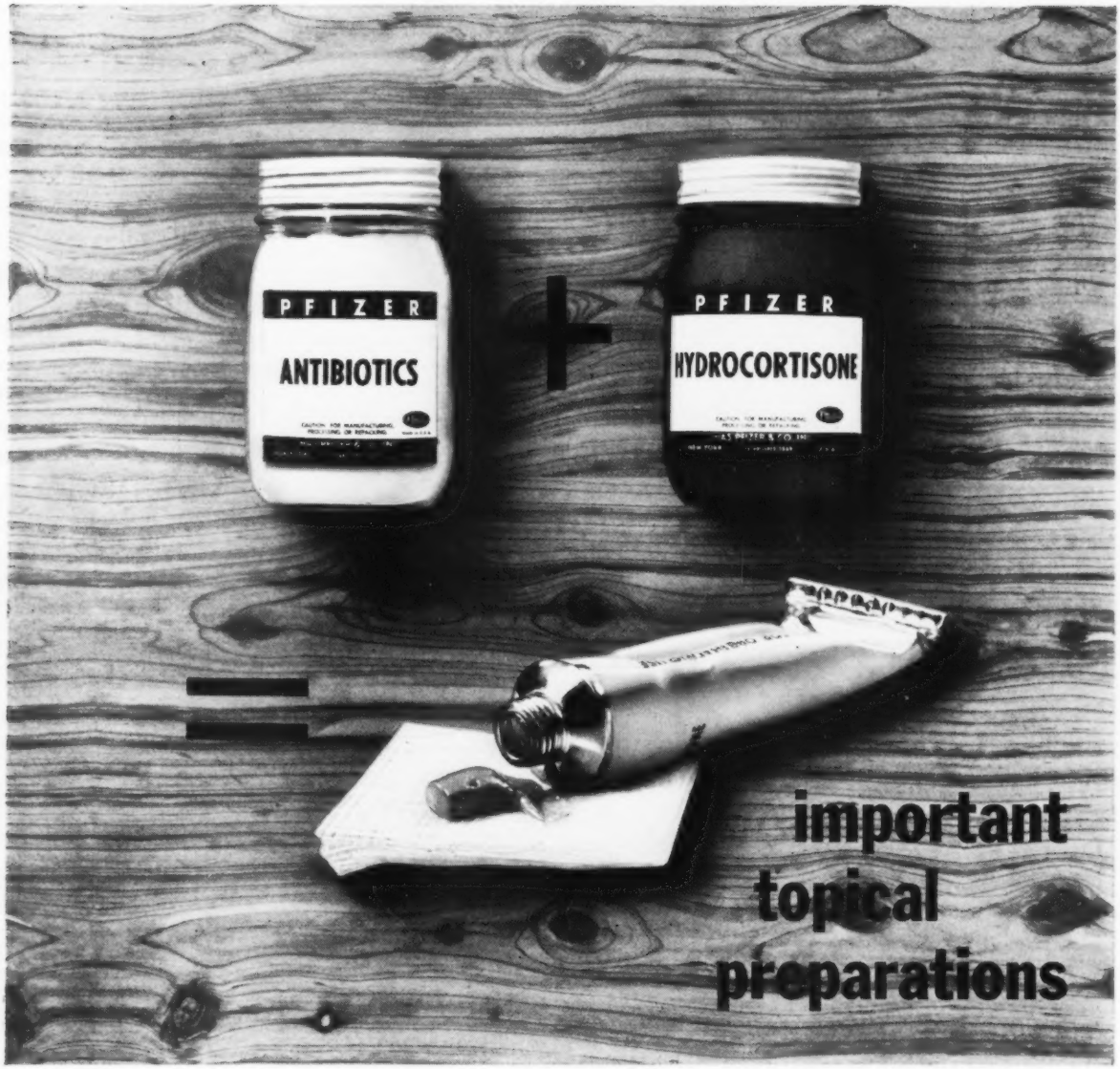

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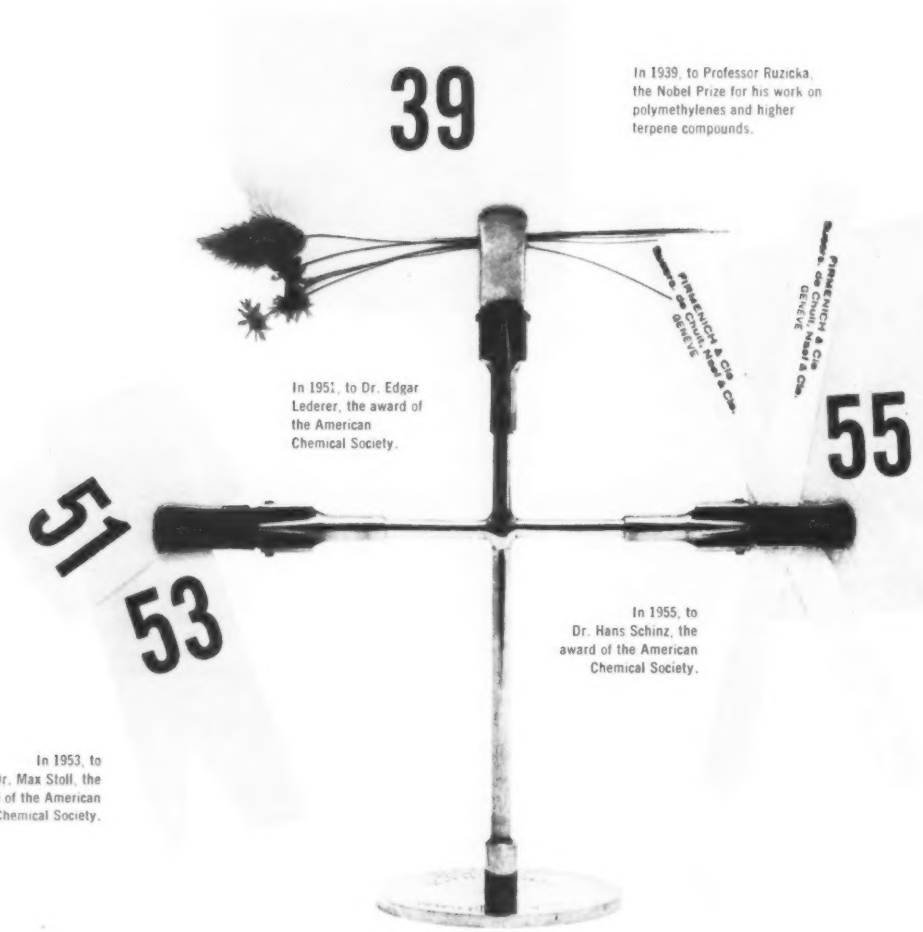
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In 1939, to Professor Ruzicka, the Nobel Prize for his work on polymethylenes and higher terpene compounds.
In 1951, to Dr. Edgar Lederer, the award of the American Chemical Society.
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In 1955, to Dr. Hans Schinz, the award of the American Chemical Society.
In 1953, to Dr. Max Stoll, the award of the American Chemical Society.

The harmonious coordination of industrial and scientific research, originally established by M. Philippe Chuit and Professor Ruzicka and carried forward by Dr. Max Stoll and his associates, has borne much fine fruit in the field of organic synthetics for perfumes and flavors. So these distinguished citations—the Nobel Prize and the awards of the American Chemical Society under the Fritzsche grant—bear witness. So does the increasing preference for Firmenich products as it is expressed by customers throughout the world.

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LAST MINUTE NEWS . . .

Skin Changes from Birth to Old Age to be Explained

At an open dinner and meeting of the New York Chapter of the Society of Cosmetic Chemists, at the Brass Rail Restaurant, New York, on the evening of September 26, Amos Light, research pharmacologist of Wellcome Research Laboratories of Burroughs Wellcome Inc. will discuss "Peripheral Vascular and Absorptive Changes in the Aging Skin." Mr. Light will discuss the changes in the skin from birth to old age, and will use slides to demonstrate work in his laboratory on penetration and absorption through the skin and will outline the probable lines of future research in the field of peripheral circulation. Throughout the industry Mr. Light, who holds degrees from several universities, is regarded as an authority on the subject. In 1954 he received the CIBA award.

Packaging Symposium to be Held in New York Oct. 23

"How Consultants Know-How Applies to Packaging of Consumer Goods" will be the theme of a symposium to be held in the Belmont Plaza Hotel, New York, October 23 at the annual meeting of the Assn. of Consulting Chemists and Chemical Engineers Inc. L. C. Cartwright of Foster D. Snell Inc. will be the guest speaker. Maurice Sage of Sage Laboratories will be moderator. The symposium will be held early in the evening following dinner.

$1,250,000 Ad Push for Aerosol Packed Bon Ami

The new "Jet Spray" Bon Ami cleanser, packed in aerosols is being introduced to the national market with a $1,250,000 advertising campaign, by the United Dye & Chemical Corp., New York, N. Y. The company acquired control of Bon Ami Co. last May and plans to again put the 100 year old company on top of the nation's cleanser market.

Houbigant and Cheramy Win Fair Trade Injunction

On behalf of both Houbigant and Cheramy, Judge Sweeney in the Federal Court at Boston recently issued a preliminary injunction against Enterprise Stores, Inc. which owns and operates a number of J. M. Fields department stores both in the metropolitan area and outside the state. The terms of the court injunction, obtained by the firm of Snyder & Tepper of Boston, restrain Enterprise Stores, Inc. from advertising, offering for sale or selling at retail any Houbigant or Cheramy products below Fair Trade prices.

Vegetable Dye for Coloring Oranges from Citrus Rind

A new patented process enables a vegetable dye for coloring oranges to be obtained from orange rind. Inasmuch as the Food & Drug Administration prohibits the use of coal tar dyes for this purpose the new process is of timely interest. Material in the flavedo yellow outside covering of the orange is a yellow carotene pigment which is extracted and converted into a vegetable dye. The dye is applied on the production line where the oranges are coated with an edible colored fat, sprayed with color, dried and stored. The Commonwealth Engineering Co. licenses the patent for making the dye.

Merger of Continental Can and Hazel Atlas Halted

Just before the merger of the Continental Can Co. and the Hazel-Atlas Glass Co. was to become effective August 8, the Department of Justice asked for and obtained a temporary restraining order from the U. S. District Court, San Francisco, Calif. to halt the merger. The government's case depends on the court's interpretation of the word "containers" in a 1950 anti-trust judgement against the Continental Can Co. It prohibited the Continental Can Co. from acquiring the assets of any manufacturer of containers except after an affirmative showing to the court that the effect of the acquisition may not substantially lessen competition. Attorney General Brownell asked the court to construe the word "containers" as including glass containers.

Procter & Gamble Expands Widely in Food Field

In a major diversification move, by a transfer of stock, Procter & Gamble Co. the largest soap manufacturing company in the United States, has branched out into the food business by purchasing Hines Park Foods Inc. and the Duncan Hines Institute, both of Ithaca, N. Y. Indirectly it has acquired by the purchase a number of other businesses ranging from appliances to salad dressing. The company also acquired that part of the Nebraska Consolidated Mills of Omaha which as a licensee, made and sold prepared mixes for cakes and baked foods under the Duncan Hines name.

As a manufacturer of Crisco and Fluffo shortening Procter & Gamble Co. did much research on the ingredients used in home baking and developed thousands of baking recipes. It was logical therefore for it to extend its interest to mix products. Neither Hines Park Foods Inc. nor the Duncan Hines Institute manufacture anything, but license about 100 other companies to make products under the Duncan Hines name. These include white, yellow and devil's food cake mixes, mixes for pancakes, waffles, muffins and brownies, coffee, macaroni, butter, bread, ice cream, frankfurters, jams, jellies, frozen orange juice, blueberries, spices, and ice cream toppings. Sales at the retail level of Duncan Hines products are $50,000,000 annually.

The Duncan Hines Institute licenses appliance manufacturers to make barbecue equipment, coffeemakers, cutlery, china, refrigerators and freezers.

The license contracts require the payment of a fixed percentage of wholesale sales. Makers of specialty items usually pay 5%; and makers of mass volume products 2% on wholesale sales. The contracts also require each maker of a Duncan Hines product to set aside at least 2% of its volume for advertising: 1½% for its products and ½% for an institutional fund for all Duncan Hines products.

Denatured Alcohol Formulas Being Revised Completely

Formulas for denatured alcohol are being revised by the alcohol tax division of the Internal Revenue Dept. so as to bring them up to date. Some of the formulas and practices no longer in use by industry will be eliminated and some new ones are to be added and corrections made in others. The changes in the regulations are being made to have them represent the actual usage of alcohol. Proposed revisions were published in the Federal Register of August 11.

Appeals Court Upholds FDA Ban on Coaltar Colors

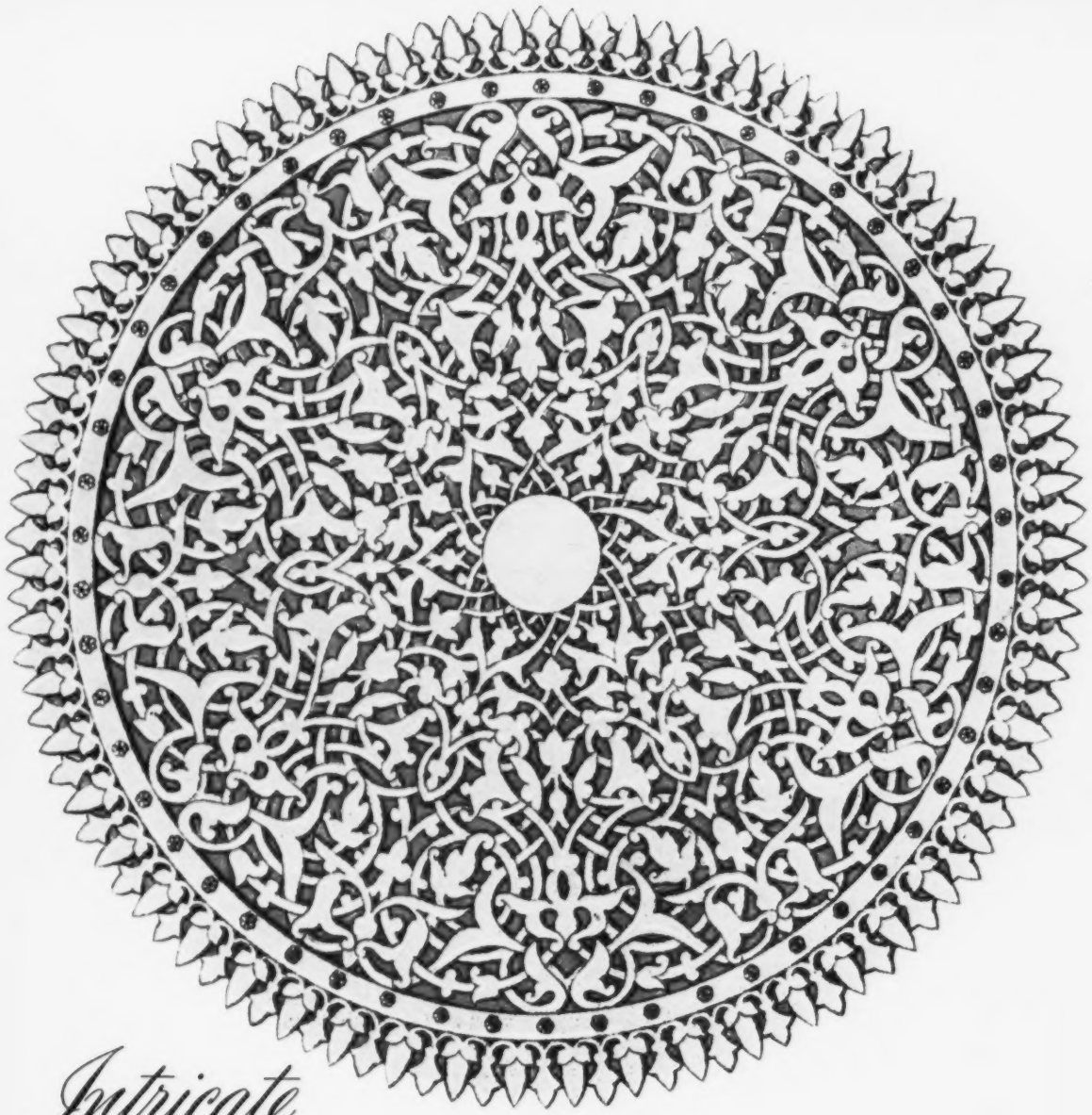
The Food & Drug Administration has authority to remove coaltar colors from the certified list and prohibit their use in food because they "may" be harmful to consumers according to the unanimous decision of the U. S. Circuit Court of Appeals for the Second Circuit. The case involved the FDA order of November 10, 1955 removing FD&C orange No. 1, orange No. 2 and red No. 32 from the certified list.

Procter & Gamble Net Sales Over One Billion Dollars

For the first time in the company's 119 year history, net sales of Procter & Gamble Co. for the fiscal year ending June 30, 1956 were over one billion dollars. Net sales were $1,038,290,374 and net earnings were $59,316,471.

Sound Waves May Clean Dirty Dishes Before Long

Engineers at the General Motors Corp. Technical Center where extensive studies of ultrasonic cleaning are being made, predict a rapid increase in this type of cleaning both in the home and in industry. Ultrasonic cleaning (with sound waves that cannot be heard) has found its widest application so far in industrial cleaning but General Motors has an experimental "sound" dishwasher that cleans dried egg off plates in 20 seconds. The sound waves do not replace soap or cleaning agents but merely make them more efficient just as the paddle in a washing machine makes the soap more efficient. The sound waves cause cavitation or cold boiling in the cleaning liquid. An infinite number of tiny bubbles, invisible to the human eye, form and collapse against the article being cleaned. The bubble bursting is believed to provide the main scrubbing action that ultrasonic cavitation produces. The sound waves are transmitted in the liquid by a transducer—a device which transforms electrical energy into sound waves. The vibrations are so minute there is no sensation of motion to the touch.



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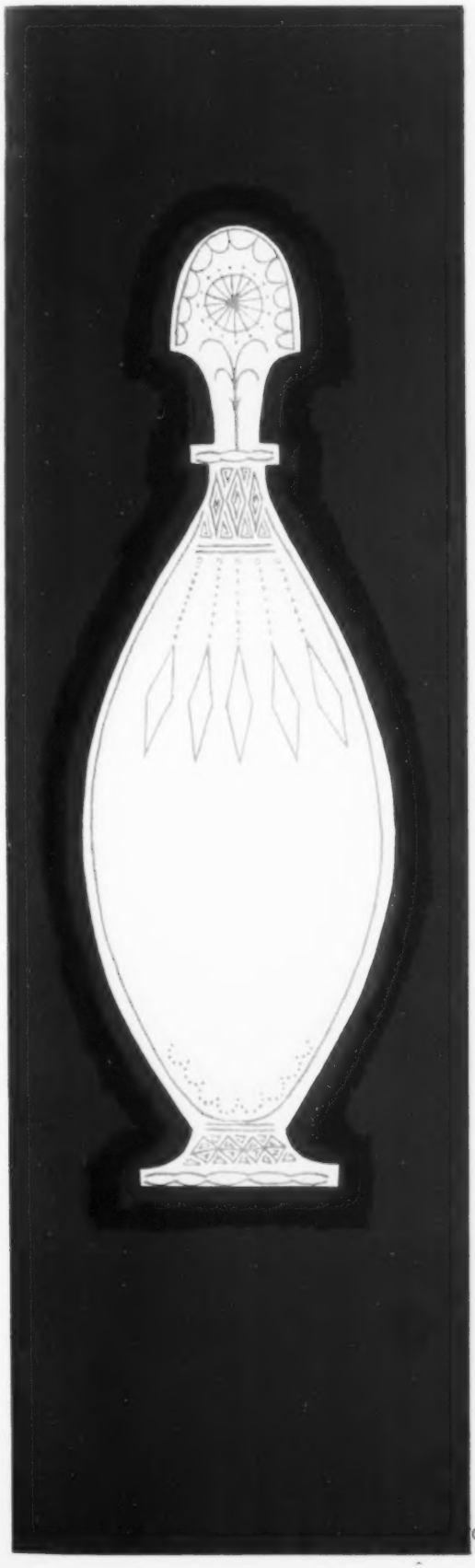

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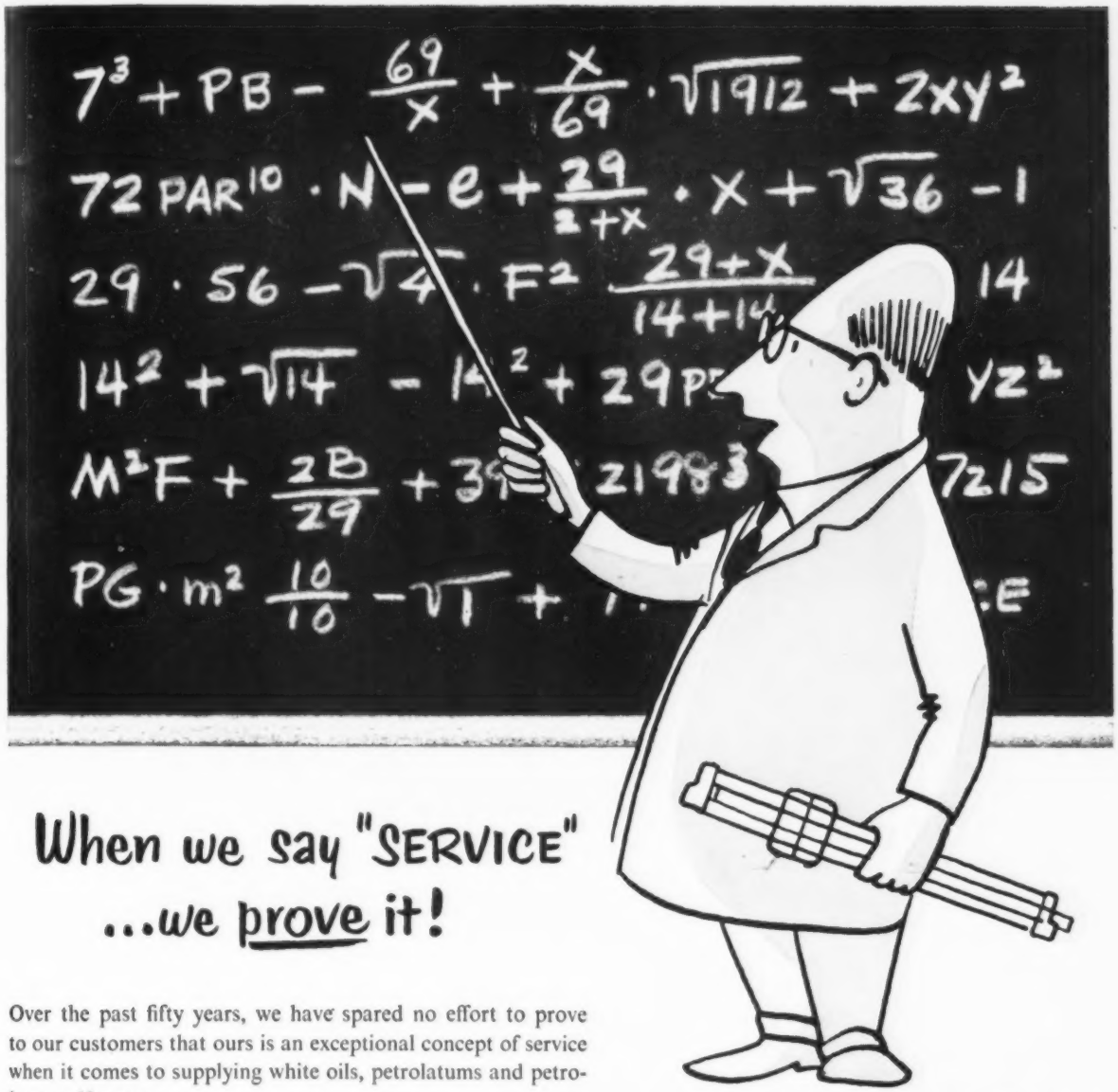
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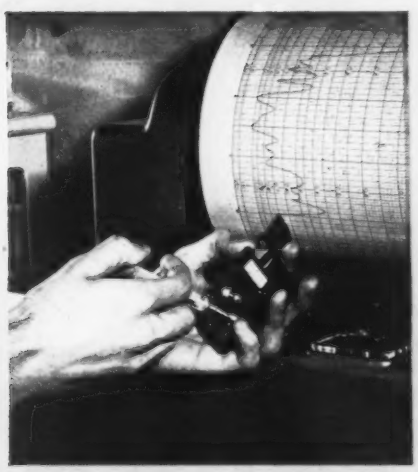

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Editorials . . .

Firms to Close Day Before Christmas . . .

In view of the fact that Christmas Day this year falls on a Tuesday and that very little business is ever accomplished on the day before Christmas plans are being made by leading houses to capitalize the opportunity to strengthen the friendly relationship between management and employes by closing down either all day or half of the day. In a survey conducted by the D. C. A. T. Section of the New York Board of Trade over 50% of the firms indicated that they would be closed all day on the Monday before Christmas. Over 25% according to present plans will be closed for one-half day and less than 13% will be open all day. Plans for the New Year indicate that 35% of the firms will be closed all day on the Monday before January 1 and 33% will be open all day, while 19% will close for one half day. In view of the large number of firms that will be closed all day on the Monday before Christmas it is likely that others will alter their plans so as to be in harmony with this worthwhile policy.

Revision of Tax Code Imminent . . .

A broad revision of the federal tax code is on the way in Congress regardless of which party is elected. Moreover hearings are scheduled to begin right after the election.

Two studies are under way to search for loopholes, inequities, exemptions, depletion allowances, administration and overall policy. One of the studies will be undertaken by the Mills subcommittee of the House Ways and Means Committee and the other investigation will be made by the staff of the Joint Committee on Internal Revenue Taxation. Various government agencies as well as the Treasury department will be asked for recommendations in the light of two years of experience under the 1954 code. Naturally there will be some overlapping which may be fortunate. Senator Harry Byrd, chairman of the Joint Committee on Internal Revenue Taxation invites written proposals for constructive legislation.

Anyone wishing to submit recommendations on specific subjects should write to the House Committee on Ways and Means and the Joint Committee on Internal Revenue Taxation, the Capitol, Washington 25, D. C.

Revision of the cosmetic excise taxes will be considered.

Cost of Time Wasted in Conferences . . .

To those who are cost accounting minded, Dr. Francis Chilson, engineer, chemist and author in one of his brilliant articles published some time ago and later distributed by the American Association of Candy Technologists, suggested a cost summary for computing the cost of conferences in which executives so often waste so much time and exhaust so much energy in the form of hot air.

"I sit in an endless number of meetings in which a vast amount of time is wasted by very expensive people," he wrote. "If the salaries of those people could be apportioned to the conferences they attend—and a lot of them do little else—it would be discovered that some of the conferences have cost the company more than the subjects under discussion." Hence he suggested that the names and salary rates (reduced to an hourly basis plus overhead of course) of the individuals attending the conference be put in summary form. In this way the cost of the conference could be computed. "Since cost minded officials insist on cost finding in every department," he asked, "why not in their own?"

"When the industrial history of this period is written it will be known as the Age of Conference. Ever since it was invented we have been committed to an endless amount of discussion, mostly about triviata, which any good executive could and should handle without reference to anybody else.

"As business becomes larger, more extensive and more complex it requires direction by able, experienced, responsible men. Still one hears a lot of discussion about the universal need for experienced men capable of assuming responsibility. Yet everything possible is done to stifle that sense of responsibility by a form of management which requires that no executive initiate action or make financial commitments without discussion and obtaining approval of his projects at some form of conference.

"Some companies are not financially sound and they spend more time worrying about the dollars that go out than they do earning those that come in. Other concerns have had such a long hard row to hoe to achieve financial soundness that it leaves a mark upon them which is not forgotten and they continue to treat every dollar spent as if it were their last one. They add to the cost of every project by talking too long about it. A little thought might help them realize that time is money and talk is costly."

Creating Understanding of Fair Trade . . .

The legal requirement that no trademarked product can be fair traded unless it is in free and open competition with articles of similar class produced by others was emphasized by Judge Donald A. Carpenter in the District Court of Weld County, Colorado in granting a preliminary injunction in the case of Parker Pen Co. vs Marvin Zale. The constitutionality of the non-signer clause in that state's fair trade law was upheld. In his decision Judge Carpenter said: "The statute carefully preserves the economic law of supply and demand and the salutary economic requirement of free and open competition. . . . It is clear that the fair trade contracts serve to protect the owner's trade marks, brands and names against a species of infringement while at the same time protecting the public against 'bait' and 'leader' practices. This provides ample economic and legal justification for the voluntary contracts sanctioned by the fair trade act of Colorado." In his decision, from which the foregoing was quoted in part although in a minor court, Judge Carpenter helped to develop public understanding of the fair trade laws to restrain unfair competition.

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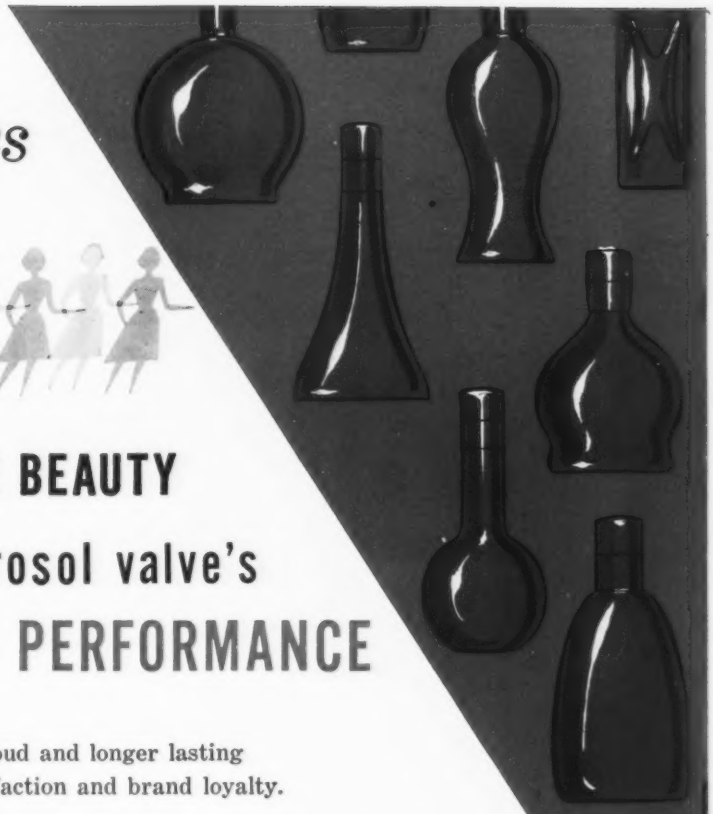

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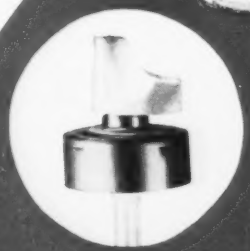

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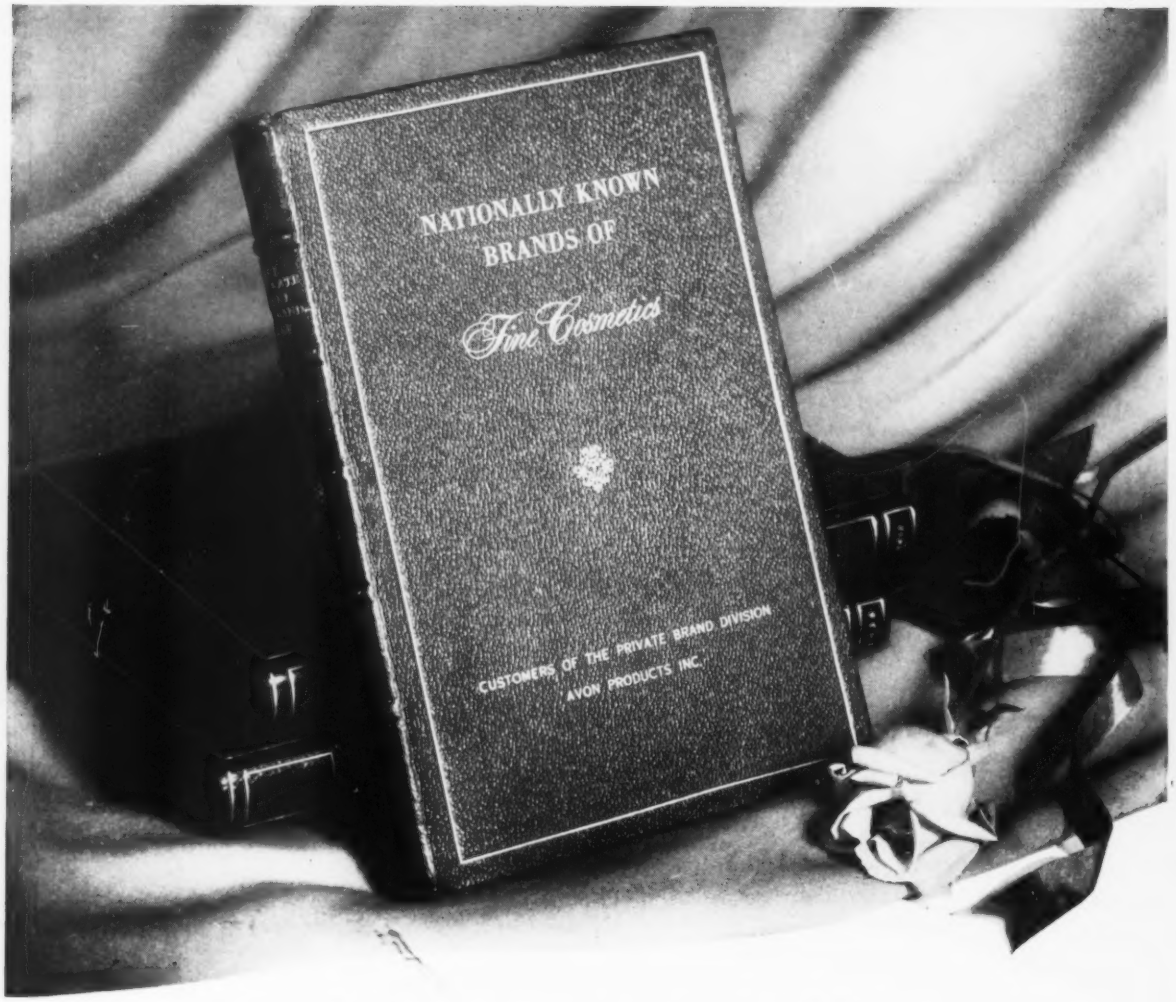

It pays to go by the book!

Naturally, this book is a "closed" one. Names of the brands of fine cosmetics and toiletries made by the Private Brand Division of Avon Products are held in strict confidence.

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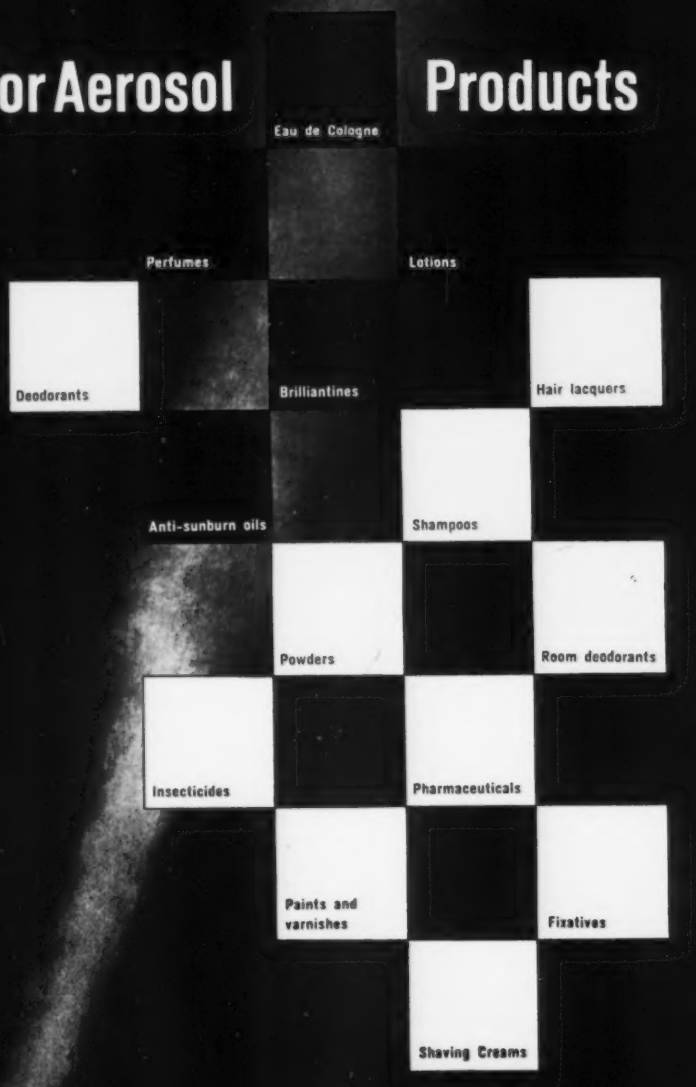

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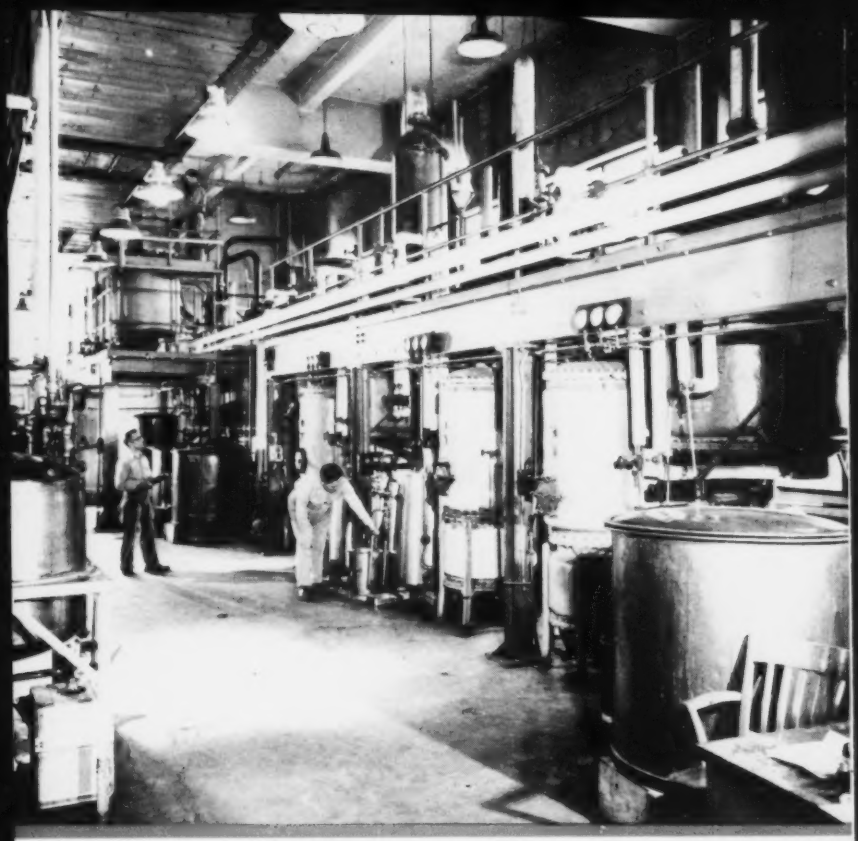

View of Still Room, Clifton Factory

It could be said that we literally pamper the oils and aromatics manufactured at our Clifton plant. For it is true that here, under vigilant supervision of every lot processed, are focused all of the accumulated skills and experience that years of patient study and probing research have developed for efficient production of high yield, high quality FRITZSCHE essential oils and their aromatic derivatives. Naturally, the customer who uses these materials benefits not only from the superiority that such scrupulous manufacturing care insures, but also from the cost advantages that efficiency and technical "know-how" inevitably produce. Therefore, if we do "pamper" our products, it is because the end result is good for our customers.

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DESIDERATA

Maison G. deNavarre, F.A.I.C.

Mineral Fat-Free Cream

The trend to make cosmetics without the use of mineral fats has been on for years but it has not picked up momentum. There are those who claim that mineral oil and petrolatum are drying to skin. So they have developed products without these ingredients.

One of the recent patents covering the use of lanolin and fatty acid esters, such as isopropyl palmitate or myristate, stressed this trend. A subsequent patent used oleyl alcohol as carrier for the lanolin. In Europe, a hydrocarbon called perhydrosqualene has been highly publicized for use in cosmetics.

The following is a basic formula for a non-mineral fat cream.

Emulsifying Wax B.P.	15-20%
Deodorized Oleyl Alcohol	3-5%
Cetyl Alcohol or Spermaceti	3-5%
Water, Preservative and Perfume to make	100%

This formula offers many opportunities for variation. Thus, perhydrosqualene, isopropyl myristate or oleyl oleate can replace the liquid fat and lanolin, hydrogenated fats, higher alcohol mixtures, wool wax alcohols or polyol stearates can be used in place of spermaceti. There is a need for a polyol such as glycerin, propylene glycol, sorbitol syrup or butanediol.

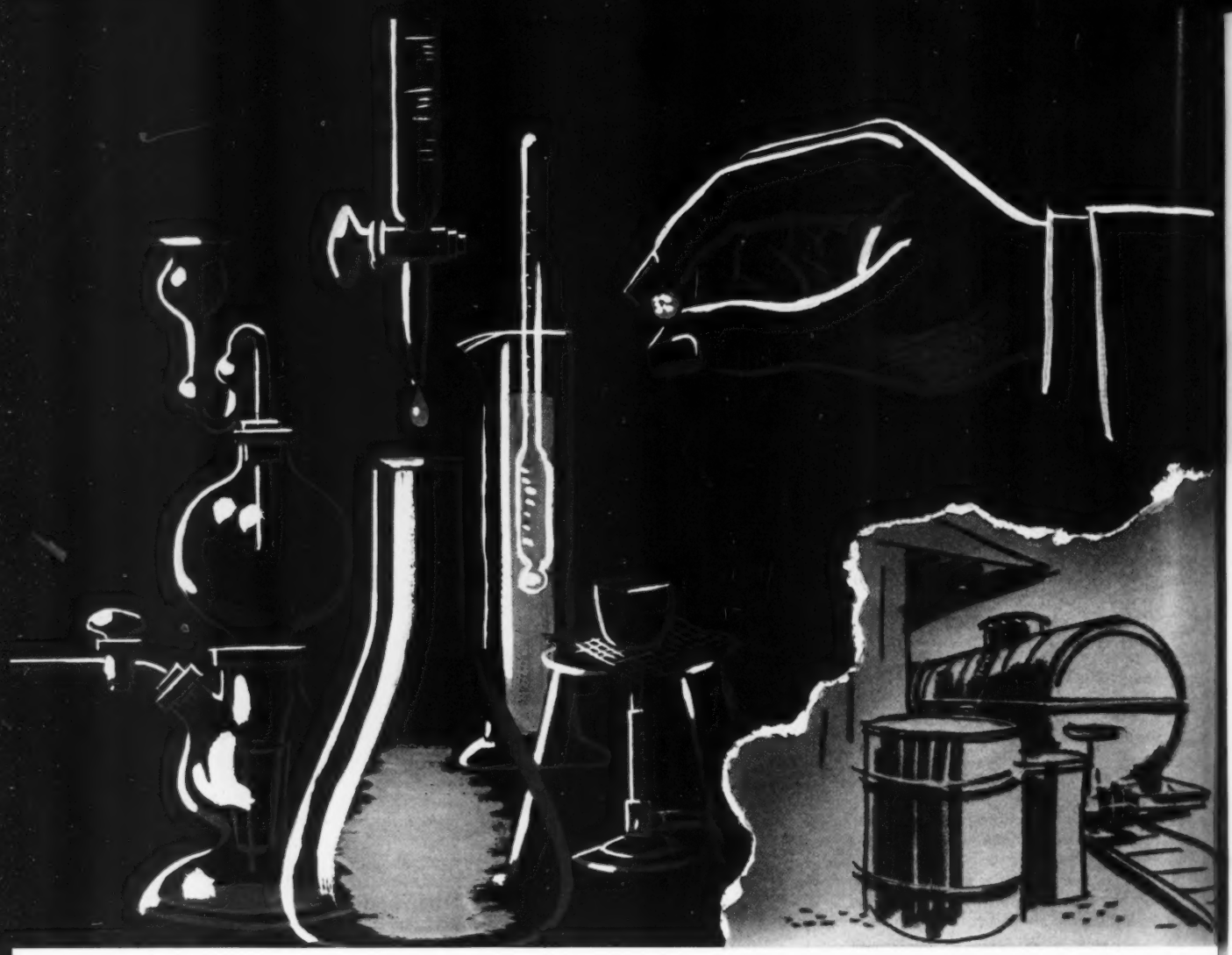
Keep in mind that emulsifying wax B.P. is essentially a cetostearyl alcohol 90 per cent and sodium lauryl sulfate 10 per cent. Therefore, cationic compounds are incompatible. Ethoxylated higher alcohols used in place of emulsifying wax B.P. present problems with preservatives. The bases are fine to use but require special formulation not to spoil.

Colors and pH

We don't often give the matter much thought, though all chemists basically know that colors are affected by pH. Not only is it a matter of solubility, in some cases, but many colors change shade completely by a small shift in pH of a solution or emulsion. This was brought out forcibly recently, in some experimental work. In a nonionic emulsion, this particular color was a golden red. But in a triethanolamine emulsion, it changed to a deep purplish-red. The pH change was from 6.7 to 8.5, not a big change really, but a darn big difference in color. You might just remind yourself of color changes in indicators when working with colorings. Sometimes we forget colors are indicators.

Notes

A note in our contemporary CHEMICAL WEEK for August 11th, indicates that Canadian researchers have determined that three FD&C colors are harmful to animals, namely FD&C Orange Numbers 1 and 2 and FD&C Red Number 32 . . . these colors will no longer be used in Canada in foods . . . wonder if we are not going overboard on this business of "Creativity inducements" — Are there no workers with integrity anymore?—Isn't a person expected to have a little "gray matter" and some skill on how to use it when he is hired?—or does he have to be especially rewarded everytime he does something? — Outstanding work should be compensated beyond the usual level but that is something that has to be done on an individual basis. . . . Another patent on the use of sodium zirconium lactate (U.S. 2,734,847), this time as an anticorrosive for the astringent aluminum salt. . . . The latest in Europe is the use of pollen extracts externally as skin rejuvenators—basis of use is that the stuff is rich in vitamins, minerals, etc., much the same argument used for Royal Jelly. . . . French Patent No. 1,069,982 has been granted to cover the use of siloxanes (silicones) as hair fixatives . . . an emulsion made with 2-35 per cent polysiloxane and glycol esters containing 45-88 per cent of water is mentioned. . . . A German journal reports a successful transplant of a toe nail onto the finger of an eight year old girl . . . the J. A. M. A. reports that juvenile hirsutism is due to hypothyroidism and can be successfully treated with dessicated thyroid tablets. . . . Foreign journals continue to insist that extract of witch hazel is an astringent—wonder if this shouldn't be examined in a different way than has been done up to now. . . . Looks like the "received" date of a scientifie publication no longer holds at the patent office—it is the



Quality in chemicals is a lot of little things

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publication date that counts—Ultrasonic emulsification continues to make headlines—it would be something if it could work out large scalewise. . . . There are many indications that proteins including hair have a helical structure including one on collogen reported by Doty at the Philadelphia A.C.S. meeting recently. . . . Freddy Wells, S.P.C. ran an interesting article on the house of Demuth in his June, 1956, issue showing that they had made a stick cologne in 1912 and called it "Frozoclone Solid Eau de Cologne" . . . Seems like "prior art" is finding as much value in research as new developments. . . . Well, an aerosol fish lure contains flavors to spray onto bait that makes them bite—I always thought chemical or artificially flavored lures were illegal for anglers. . . .

Finally On Quotations

In the last issue it was mentioned that references from various "foreign" publications showed 1,052 foreign and 275 U. S.

I have just finished tabulating the references from current issues of SCIENCE, JOURNAL OF THE SOCIETY OF COSMETIC CHEMISTS, JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, JOURNAL OF THE AMERICAN OIL CHEMIST'S SOCIETY, INDUSTRIAL AND ENGINEERING CHEMISTRY, TRANSACTIONS OF THE NEW YORK ACADEMY OF SCIENCE and part of the JOURNAL OF THE AMERICAN CHEMICAL SOCIETY.

The pattern is set quickly. After the first few articles one finds this ratio, the larger figure always for U. S. references 19/34, 38/60, 76/138, 104/181 and finally 382/597 at which point counting ceased because the figures were not changing too much. It is a fair guess that if you don't isolate your articles, but cover enough material, you will find that U. S. scientists quote about twice as much literature of their own as of foreign source.

Whereas, the count shows that European scientists go nearer four times as much of European references as compared to U. S.

It is not being said that Yanks are any better at quoting foreign literature than "foreigners" at quoting "foreign" literature. What is established is, that Yanks are no worse than our foreign contemporaries, which is just opposite to what our foreign friends think is the case.

That's the end of my argument on *this* subject.

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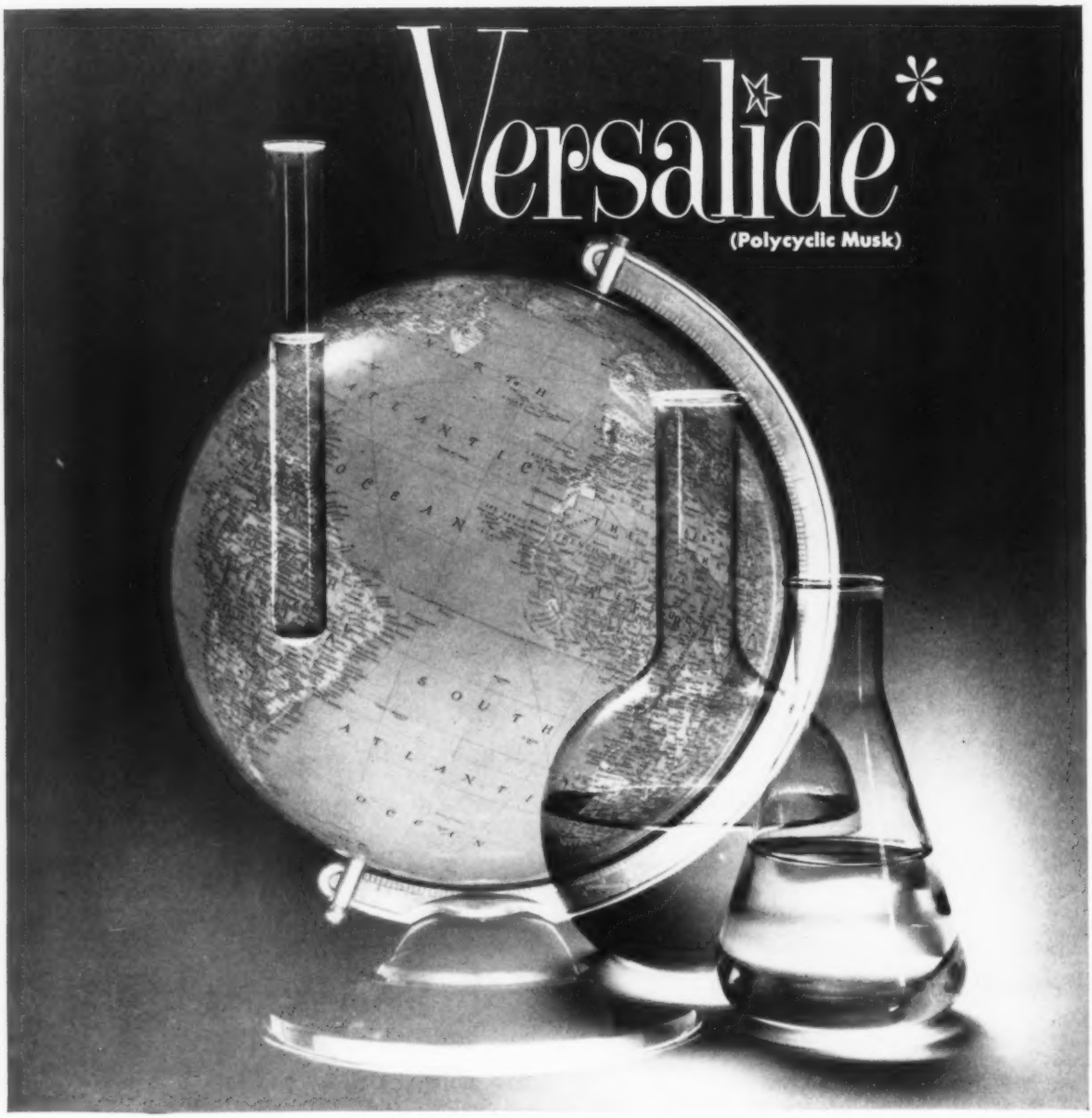

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Versalide lends to a perfume all the enhancement, sweetness, strength, fixation and blending properties expected only from the macrocyclic musks, and yet at a fraction of their cost.

A pure chemical body, not a mixture, *Versalide* is economical — stable to light, heat, air, alkali; and does not discolor soap. And its versatility is practically unlimited!

We will gladly send you a sample and more detailed information.

*Trade-mark Patent Pending

GIVAUDAN

GIVAUDAN-DELAWANNA, INC.
330 West 42nd Street, New York 36, N. Y.

QUESTIONS & ANSWERS

1206: PASTE FOR HAIR

Q. I am picking up a colored trade and have many calls for a paste for hair. Do you have a formula for such a paste? Could you also recommend a chemical house similar to the R. F. Revson Co. where I can buy chemicals for making cosmetics? L.A.I., New York.

A. We suggest you buy a book on cosmetics which will give you the types of a "paste for the hair." A company selling cosmetic chemicals is the City Chemical Co. The R. F. Revson Co. was liquidated two years ago. When we get more information from you, we will be happy to try to help.

1207: AEROSOL FORMULAS

Q. Would you please supply formulations for aerosol hair spray, aerosol air deodorants, aerosol shampoos and hand and face lotions. KZC., Minnesota.

A. We suggest you buy a book on cosmetics which will give you the types of formulations you wish. In this line you might get the book by Keithler entitled, "The Formulation of Cosmetics and Cosmetic Specialties," which has recently been published. This can be purchased from THE AMERICAN PERFUMER at something just under $10 a copy. However, we suggest a formula that was conceived by Meyer as follows:

Sodium lauryl sulfate paste 40%; Polyethylene glycol 400 di-stearate 4%; Zinc stearate 1%; Triethanolamine lauryl sulfate 1%; Water 54%; Perfume q.s. This is mixed with 10 per cent of a propellent consisting of equal parts of Freons 11 and 12 with a resulting pressure of 41 pounds per square inch.

For a lotion for hands or face, why not try the following:

Amercol L-101—10 parts; Lanolin—2 parts; Stearic acid—2½ parts; Glyceryl monostearate, pure—3½ parts; Glycerin—5 parts; Triethanolamine—1 part; Denatured alcohol—4 parts; Water—82 parts; Perfume and preservative—to suit. The fatty material is brought to a temperature of 90° and the water, trienthanolamine and glycerin plus preservative are brought to the same temperature in a separate kettle. The water solution is added to the oils under agitation. The alcohol is added at about 50°C., along with the perfume. The product is agitated until cool, remixed the next day and bottled.

1208: HAND LOTION WITH LANTROL

Q. We are interested in producing a quality hand lotion containing Lantrol. We wonder if you could suggest several formulas that we might use. P.I.B., California.

A. The following is a starting point for a hand lotion containing Lantrol. You will obviously want to modify or vary some of the ingredients to get the consistency and feeling you desire.

Lantrol—5 parts; Lanolin—20 parts; Mineral oil, light—36 parts; Stearic acid—4 parts; Glyceryl monostearate, pure—2 parts; Glycerin or propylene glycol—5 parts; Triethanolamine—1 part; Water—90 parts; Methyl p-Hydroxybenzoate—0.15 parts; Perfume q.s. The fats are heated to about 75-80°C., the water, preservative, triethanolamine, glycerin and any other water soluble materials are brought to the same temperature. The water is added to the fats under agitation and the product is stirred until cold. The perfume is best added at a temperature somewhere around 45-50°C. Also these formulas are usually better by allowing them to stand overnight, remixing for about five minutes the next day and then filling.

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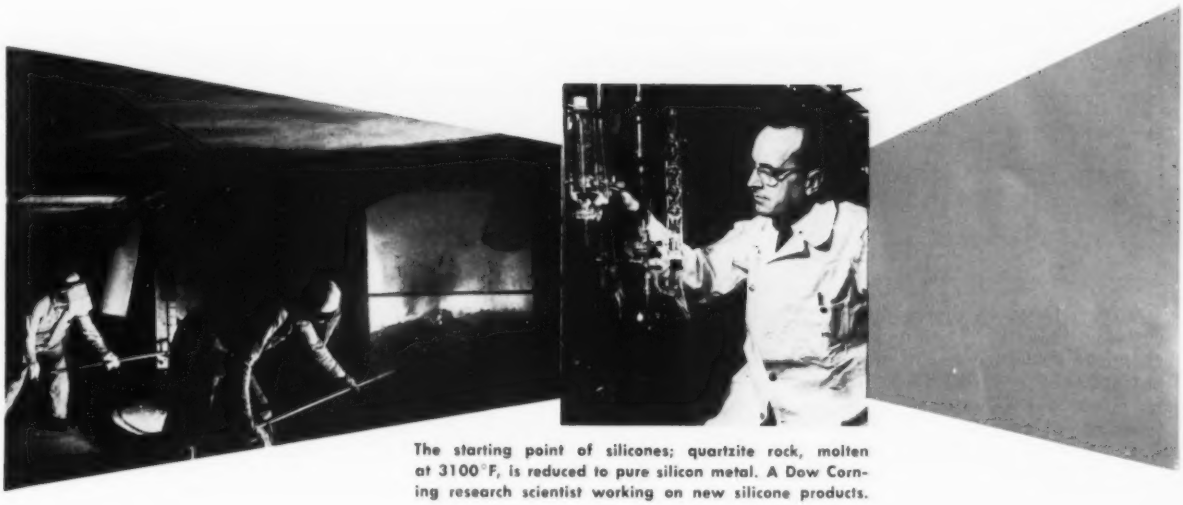


The starting point of silicones; quartzite rock, molten at 3100°F, is reduced to pure silicon metal. A Dow Corning research scientist working on new silicone products.

NEW SILICONES for the COSMETIC INDUSTRY

PART I

C. C. CURRIE and R. C. GERGLE**

SILICONES ARE both unique and singularly versatile materials. A silicone fluid, for example, may be used to release resin bonded sand shells in a foundry; as a dielectric fluid in transformers, and even to relieve bloat in cows. Silicone resins may be used to make masonry and brick walls water repellent; as insulation for electric motors and to protect industrial smokestacks against the ravages of heat and moisture.

Because of this versatility and the widespread use of silicones, it is difficult to keep abreast of all the latest developments in every industry where silicones are used. While we have learned quite a bit about the requirements of your industry, we are far from being experts in the formulation of cosmetics. We do feel, however, that through our familiarity with the chemistry and applications of silicones, we may be able to help with problems you face in the development of improved cosmetic formulations.

Much of the work of our research laboratories is directed toward the synthesis of new, silicon-containing chemicals. Literally hundreds of new silicones have been synthesized. The problem of selecting the silicones that are most likely to interest you is fortunately simplified by establishing certain criteria.

First, the silicones should be relatively inexpensive. Second, the silicones must exhibit characteristics differ-

*Product Engineering Laboratories, Dow Corning Corp., Midland, Mich. Paper presented before the Society of Cosmetic Chemists, December 15, 1955. Reprinted from the Journal of the Society of Cosmetic Chemists, Vol. VII, No. 3, May, 1956.

Fluid	Color	Viscosity, cs at 25 C	Freezing Point	Refractive Index, 25 C	Specific Gravity, 25 C/25 C	Surface Tension, dyne/cm
Salicylate end-blocked	water white	27.2	—75 C	1.4348	1.025	23.5
Dimethyl polysiloxane	water white	20	—60 C	1.4000	0.955	20.5

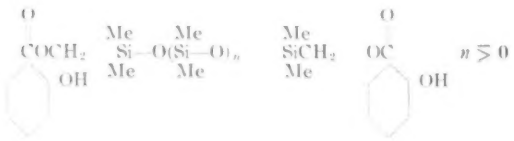
Table 1—Typical properties of salicylate end-blocked fluids compared to dimethyl polysiloxane fluid.

ent from those of the products commonly used in the cosmetic industry. They must be unique either in their chemical structure or in some property such as compatibility or physical form. With these considerations in mind, our laboratories have developed three new types of silicones:

1. Salicyloxymethyl dimethylsilyl end-blocked fluids
2. Fatty alcohol esters of dimethylpolysiloxane
3. Ethylene or polyethylene glycol esters of dimethylpolysiloxane

Salicyloxymethyl Dimethylsilyl End-Blocked Fluids

The first type of silicone we shall discuss is a salicylate end-blocked fluid represented by the structural formula:



The simplest structure in this series is the disiloxane, where n is equal to zero. As n is increased the resulting fluid behaves more and more like a dimethylpolysiloxane and the effect of the salicylate radical on physical properties is diminished. For example, when n is equal to zero, the viscosity of the polymer is 33.2 cs. at 25°C. When n equals 4 the viscosity drops to a low value of 18 cs. Then, as n increases the viscosity follows an upward trend similar to other silicone polymers. It n were infinitely great, we would expect that the resulting fluid would be indistinguishable from its analogue,

$$Me_3SiO(SiO)_nSiMe_3 \quad n \rightarrow \infty$$

The effect of the salicylate group is still evident, however, in a polymer containing 12 dimethylsiloxane units. A fluid of this length is compared with a dimethylpolysiloxane fluid in Table 1. Note that the salicylate radical is responsible for a higher density, refractive index and surface tension. The lower freezing point is probably caused by an interruption of the symmetry of the molecule due to the bulky ring at each end of the chain.

Because of these facts any salicylate end-blocked dimethylsiloxane is likely to be a compromise between a fluid predominantly organic in nature and one which exhibits the characteristics expected from dimethylpolysiloxane fluids. These fluids, like the dimethylpolysiloxane fluids of comparable viscosity, are water-white liquids possessing rather low surface tensions. Due to

	Salicylate End Blocked Fluid**	Dow Corning 200 Fluid 20 cs
Beeswax	C	i
Lanolin	C	i
Mineral Oil	C	i
Petrolatum	C	i
Paraffin	C	i
Ozokerite	C	i
Sesame oil	i	i

Table 2—Comparison of compatibility of salicylate end-blocked fluids and 200 fluids with various materials.*

	Salicylate End Blocked Fluid**	Dow Corning 200 Fluid 20 cs
Dow Corning 200, 100 cs	C	C
Dow Corning 555	C	C
Water	i	i
70% Isopropanol	i	i
95% Ethanol	i	i
99% Isopropanol	C	C
Ethylene glycol	i	i
Propylene glycol	i	i

Table 2a—Comparison of compatibility of salicylate end-blocked fluids and 200 fluids with various materials.*

*Tested at room temperature as a mix made up of one part silicons to ten parts material listed.

** Me_2SiO content—twelve units. C—compatible; i—incompatible.

	Salicylate End Blocked Fluid**	Dow Corning 200 Fluid 20 cs
Glycerine	i	i
Stearyl alcohol	C	i
Isopropyl myristate	C	C
Glyceryl monostearate	C	i
Diglycol stearate	C	i
Oleic acid	i	i
Stearic acid	C	i

Table 2b—Comparison of compatibility of salicylate end-blocked fluids and 200 fluids with various materials.*

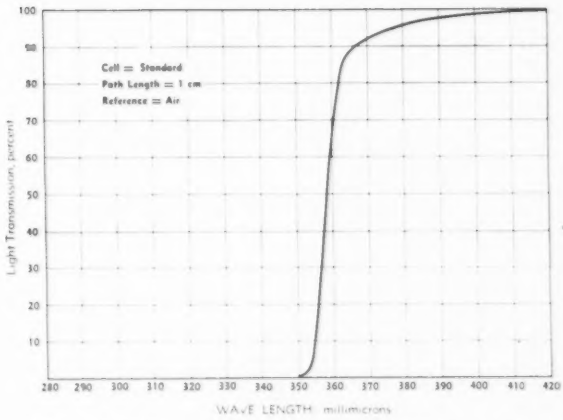


Figure 1—Light transmission of salicylate end-blocked fluid.

this low surface tension, the fluids spread easily and deposit a non-oily film on the skin.

The salicylate end-blocked fluids contain an organic ester linkage. In this respect they differ from the products we will discuss later where the ester contains a carbon-oxygen-silicon linkage. In general, the organic ester linkage is much more stable toward hydrolysis than the carbon-ogygen-silicon linkage. If hydrolysis should take place, however, the products are likely to be salicylic acid and a high molecular weight dimethylpolysiloxane.

In contrast with the usual dimethylpolysiloxane (Dow Corning 200) fluids, this type of fluid is soluble in many organic materials (Table 2). Solubility was determined by mixing one part by weight of the silicone with ten parts of the organic material. The mixture was heated (above the melting point of the solids, if present in mix), stirred and cooled to room temperature. Haziness, separation or precipitation were interpreted as signs of incompatibility, while homogeneity and clarity were assumed to denote compatibility.

The data in Table 2 indicate that the salicylate end-blocked fluid is similar in solubility to Dow Corning 555, an alcohol-soluble silicone. In general, the former is compatible with 99 per cent isopropanol; animal fats and waxes; esters such as isopropyl myristate, diglycol stearate and glyceryl monostearate; fatty acids; hydrocarbon oils and waxes; and silicone oils such as Dow

* Tested at room temperature as a mix made up of one part silicone to ten parts material listed.

** Me_2SiO content—twelve units. C—compatible; i—incompatible.

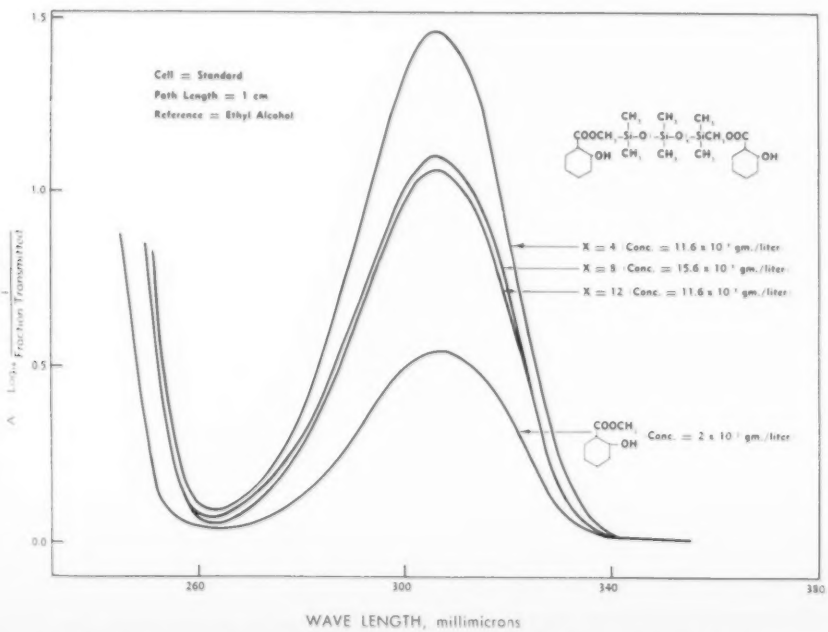

Cell = Standard
Path Length = 1 cm
Reference = Ethyl Alcohol
X = 4 Conc. = 11.6 x 10⁻³ gm./liter
X = 8 Conc. = 15.6 x 10⁻³ gm./liter
X = 12 Conc. = 11.6 x 10⁻³ gm./liter
Conc. = 2 x 10⁻³ gm./liter
WAVE LENGTH, millimicrons

Figure 2—Absorption of salicylate end-blocked fluid compared to methyl salicylate.

Corning 200 and Dow Corning 555. It is incompatible with vegetable oils, water and most alcohols. Apparently the addition of the salicylate radical, to the dimethylpolysiloxane structure is responsible for this increased solubility over a dimethylpolysiloxane fluid of about the same molecular weight.

Absorption of Ultraviolet Light

As might be expected the salicylate end-blocked fluids absorb ultraviolet light. In Fig. 1 the light transmission is plotted against the wave length. The transmittance for a fluid containing 12 dimethylsiloxane units is negligible below 350 mμ, but increases from 0.7 per cent at 350 mμ to 91.9 per cent at 370 mμ.

In Fig. 2 the dependence of ultraviolet light absorption upon chain length is illustrated. Methyl salicylate, a common ultraviolet absorber, is used for comparison. The fluids were evaluated at dilute solutions in absolute ethanol. As a result, determinations were made using ethanol as the reference instead of the empty quartz cell used for Fig. 1.

No shift in wavelength for maximum absorption occurs for any of the fluids examined. Calculations using the data in Fig. 2 for the 350 mμ absorption band were made to determine the efficiency of the salicylate radical. Methyl salicylate was arbitrarily assigned a value of unity. These data are presented in Table 3.

No. of Me_2SiO Units	Order of Effectiveness*
4	1.13
8	0.86
12	1.68

*As compared with effectiveness of methyl salicylate rated as 1.0

Table 3—Effectiveness of salicylate end-blocked fluids as sunscreens.

If the same quantity of salicylate is present in each case, we find that the higher molecular weight silicone is about 1.7 times as effective as methyl salicylate. This is even more surprising when one finds that dimethylpolysiloxanes exhibit little absorption in this range. Apparently a synergistic effect is present. In other words, we do not know exactly what is happening.

In the 290 to 320 mμ range these silicone fluids are at least as effective, probably more so, than methyl salicylate in filtering destructive ultraviolet light. However, they are relatively transparent to the less harmful, tanning wave lengths in the 350 to 370 mμ range. This characteristic together with insolubility in water suggests the use of this type of fluid in suntan lotions as well as in non-cosmetic uses such as paints, automobile polishes and textile treatments.

In succeeding installments the authors discuss two other classes of silicones, fatty alcohol esters of dimethylpolysiloxane and glycol-siloxane copolymers of dimethylpolysiloxane with their characteristics as related to the problems of the cosmetic chemist.

CREDIT BUYING

A respectable and powerful expander of markets

WITH credit buying becoming more deeply ingrained in the consumer's life it is bound to affect manufacturers' selling strategy. Now with everybody getting into the credit act manufacturers will find it desirable to take on more of the burden of using time payments as a sales promotion device. Eastman Kodak Co. has helped its dealers operate time selling plans and feature deferred payments in its national advertising. Olin Mathieson's Winchester Western Division is promoting retail credit on firearms to broaden its consumer market.

The manufacturer must assume more and more of the retail selling burden:

—Pre-sell his brand name because of weak selling at the retail level.

—Research methods of self-selection and self service selling to make it easier for the consumer to buy.

—Packaging and fixturing for better exposure of his products to the consumer.

—Stock control to prevent out-of-stock conditions in the retail store.

—Advertising and display allowances.

—And other activities that were once the functions of the retailer.

Now as credit emerges as a selling device it is inevitable that manufacturers will pick it up and use it to accelerate sales at the retail level.

Keep a watchful eye on *your* outlets. If they're losing out to competition because of lack of credit facilities, help them make credit arrangements and then help them promote credit. Aloofness from this problem is no longer possible. For credit buying and selling are no longer confined to the stores and people "across the tracks." Today, credit is a mighty respectable (and mighty powerful) expander of markets.—*Grey Matter.*

"Are you the cosmetic buyer?"

There's a growing market in

SUNTAN COSMETICS

BETWEEN the demise of the bathing suit that covered the anatomy from ankle to neck and the birth of the bikini (possibly, though not certainly, the end of an evolution that has had its own fascination), there has arisen the concept of the woman who is not only mate but also companion to her spouse. The idea has brought with it a trend toward the healthfully robust as the ideal in beauty, and the smelling salts bottle of previous generations has been replaced by the suntan spray.

The leading cosmetic companies have been emphasizing suntan products to a greater extent in recent years, proceeding on the theory that there's gold in bronze skins. Figures on sales of the lotions and creams have fostered the idea—for 1953, $6,690,000; for 1954, $7,270,000; and for 1955, $8,300,000.

Illustrated on this page are advertisements run by three of the leading companies this year: Shulton's Bronztan (The silicone suntan product that protects you even after swimming!); Noxzema Suntan Lotion (Wonderful Tan! Wonderful Feeling!); and Revlon's Sun Bath (Now! Tan to Gold without Peeling!).

At present there seems to be no indication that the pendelum is about to take a backward swing to the lily white complexion of yesteryear as the ideal, though in July Helena Rubinstein did launch a new product recommended both for tanning, and by the application of several layers, for going into the sun and not tanning—possibly a delayed reaction from Marilyn Monroe's statement that she never tanned because she liked to "feel blonde all over."

WHY MENNEN'S VOLUME HAS DOUBLED

IN THE LAST FIVE YEARS

FOUR BASIC FACTORS:

1. **Higher male grooming standards**
2. **Power of TV advertising**
3. **Consumer acceptance of new products**
4. **Greater exposure by grocery store distribution**

WILLIAM G. MENNEN, Jr.*

IF someone had told my grandfather, Gerhard Mennen, that the little business he started 79 years ago in Newark would grow to be the largest company in its field in the world, I am positive that Grandfather though he had great vision, would have dismissed his informant as being an idle dreamer. And if anybody had said that almost one-half of the company's products would be sold in grocery stores, this too, would have been hard to believe.

But both these facts have become a reality—and amazingly enough, they've taken place within the last five years.

When I got into the administration side of the company, at the beginning of that five-year period, I too might have questioned the idea that such a great proportion of our sales would stem from the food field.

However, I have seen it happen. And I've also seen our total volume soar so rapidly during this time, that it is now double the amount it was when I started out.

It doesn't follow, however, that climbing sales in food stores alone have accounted for our great increase in volume. A lot of other factors have contributed to the over-all sales picture.

First, there has been a great expansion in the whole male market for grooming products. We have found that the good-grooming habits that men acquired while serving in the Armed Forces stayed with the great majority of them when they returned to civilian life. This, in turn, has helped to establish extremely high standards in the grooming habits of all the country's men. In fact, you might say that never before in history have men appeared so attractive and smelled so good!

The second reason for Mennen's booming sales has been the far greater impact and penetration of our potential market, made possible today by television. You can watch the sales curves on the chart in my office, and see rise after rise take place coincidentally with the start of each one of our TV programs. Such programs as the "Wednesday Night Fights," "Basketball Game of

*Executive vice president, the Mennen Co. Republished by courtesy of Food Business.

The Week," and TV film programs we sponsor, have been tremendously effective.

A third reason for growth has been our fortunate ability to develop new products that have been exactly "right" for the times. In the past five years we have put on the market a number of new products, including Menthol-iced Foam Shave, Afta, and Spray Deodorant. Each one has caught on immediately, to add to the growing total.

Entry Into Food Field

Finally, there is the element of far greater consumer availability—and here's where food stores have figured so importantly. Tied in with this is, of course, the tremendously multiplied exposure factor that this type of retail operation has been made possible.

Frankly, our entry into the food field was a difficult challenge to meet. Five years ago our sales staff contacted approximately 300 wholesale and chain drug accounts. There were department and syndicate stores also, but these were relatively few in number.

When food outlets were added, we found ourselves doing business with a brand-new trade class, strange to our way of doing business, that was eight times as large as our former list of contacts. We were literally plunged into a sales operation that took in an additional 400,000 new retailers.

Naturally, we had to increase our sales staff in number. But more than that, we had to make sure that the solid nucleus of our original staff would operate smoothly and efficiently in a new field.

This evolution, however, was by no means unique with Mennen. Other manufacturers of non-food products faced the same problems. In fact, it was apparent that food stores themselves were in a quandary about handling this type of merchandise. As it turns out, they were in the middle of one of the most dramatic revolutions in the history of selling.

Like all manufacturers who are suppliers in the food field, we had to re-tool our operations to meet a multitude of new problems. Dealing with the food field called for sales techniques that are among the most exacting in business. We found that food stores operate almost exclusively on a basis of *facts and figures*—all refined to an extremely high degree.

A manufacturer who hopes to sell his goods through food stores must be prepared to deliver the most complete factual information that it is possible for him to get up. He must give data on market potentials and complete run-downs on ad programs. To top it off, he must tell food stores how much impact his advertising will have on their customers in even small cities.

In the last analysis, food stores have a habit of handling only those items which will move rapidly, and deliver a good profit. Aside from those two essentials, there just aren't many other angles that interest them.

Sharper Product Development

In the five years that have passed since I have been highly active in the Mennen Company, I have been sharpening product development and gearing up our distribution to meet all kinds of new situations. From this experience, it seems to me that the rising importance of food retail outlets has actually had an excellent influence on *all* who sell health and toiletry items. Sales of such items in food stores have amply demonstrated that Mr. and Mrs. John Q. Public have enthusiastically responded to the opportunity of being able to buy these goods at the same time they do their regular home provisioning.

In reality, increased availability of toiletry supplies in food stores, has, if anything, increased sales in drug retail establishments. You have only to look around your neighborhood drug store to see the food store influence at work. You'll see many kinds of self-help displays, for example, or exceptionally lively, attention-getting gimmicks, or any one of a number of sales techniques that encourage impulse buying. From every standpoint, competition has been a healthy, constructive element, and drug retailers the country over are doing far better merchandising than they did four or five years ago.

In short, *everybody* has benefited.

Never have we subscribed more wholeheartedly to the slogan that one should "never underestimate the power of a woman." We see the food store as a place where exposure is multiplied again and again. Women shop often, they see our product often. They are going shopping for groceries today with a list that often as not includes men's toiletry items. This means that there is less of a lag between buying times, for women are more apt to get into the habit of replenishing necessities before supplies are completely used up.

Women are a particularly important influence when it comes to establishing new products. All surveys indicate that when a manufacturer makes a believable claim for a product in his advertising, women are more apt to respond, and go out and buy a product for the first time.

Last, but not least, it takes no statistician to figure out that the desire of women-folk to see their men well groomed has done much to increase consumption. In millions of homes, we've found, the first bottle of Mennen's Spray Deodorant was brought in with the family's weekly supply of groceries.

What can we expect in the future?

We know that sales of Mennen products will continue to grow in food stores. I wouldn't attempt to guess how much, but one thing is certain—everytime a market is broadened, it's just like Topsy—it'll grow all over.

Turpentine Oil

EXTRACTION and PROPERTIES

H. K. THOMAS, Ph. D.°

Courtesy National Film Board of Canada.

The oleoresin balsam of various conifers, which oozes forth when their bark is tapped, as well as the essential oil obtained from it by means of distillation and the residue of colophony in this process, have been known since ancient times.

The source of our knowledge in this, as in most cases of scientific observation, are the writings of Dioscorides and Pliny that have been handed down to us.

The oldest technique for obtaining turpentine oil mentioned in these books is a kind of primitive distillation. It was based upon turpentine, which was boiled with water over an open fire in an open earthenware caldron. Wooden staves were laid across this kettle and wool spread upon them to catch the condensing oil fumes as they rose. In order to remove the fluid, the wool was wrung out, and the oil that gathered on the surface was skimmed off.

The first mention of turpentine oil prepared through proper distillation is to be found in an 8th century writing by Marcus Graecus. The 13th century scholars Villenovus and Lullus were familiar with the manufacturing of turpentine oil. Later on it was referred to in books by Saladin of Ascalon, John of Sant' Amando, Walter Ryff, Gesner, Porta, Valerius Cordus and others as "burning water," *aqua ardens*. Not until the 17th century was this term replaced by *Spiritus terebinthinae*.

The oldest kind of turpentine tapping, mentioned as early as the 14th century, is the French. Specimens of petrified trees showing the characteristic slashes indicate, however, that tapping must have been carried on very early in southwest France. As late as the mid-18th century the great evergreen forests of North America were used solely for the making of tar and pitch from turpentine for shipbuilding (thus the term Naval stores). Only since the end of that century has turpentine been worked up into turpentine oil and colophony.

Exportation began around the middle of the 19th century. The highest point in manufacturing was reached in the years 1908-1909, at which time the U.S. produced some 80 per cent of the world total. Today U.S. extraction of turpentine oil has declined as a result of the widespread exhaustion of the original stands and amounts to two-thirds of world production.

Turpentine oil extraction in the producing countries is done in various ways and with various conifers. North American production is the most important. The pines used here nowadays for tapping are the *Pinus palustris Miller* (longleaf pine) and the *Pinus caribaea Morelet* (slash pine). The other pine varieties tapped in former years are no longer signficant. The importance of the once-predominant longleaf pine has declined, since the virgin forests are exhausted, and at present mostly either new cultivations or else naturally sown stands are tapped.

Prolonged observations having shown that the slash pine (*Pinus caribaea*) yields more turpentine, grows faster, and is thus better suited to tapping, and it is this variety that is now preferred. For example, of the 70 million pine seedlings transplanted in Georgia and Florida in 1949-50, 99 per cent were slash pine and about 1 per cent longleaf pine. Nowadays, attempts are made to increase the turpentine yield by using the seeds of pines with particularly high yield for breeding, and by planting the trees more closely than hitherto: 160 to 200 per acre as compared with about 20 before. In this way it is hoped that the present yield can be increased twenty times.

The main production centers for turpentine from 1850 until about 1900 were the Carolinas. In the 1880's, tapping was begun in Georgia, Florida, Alabama, Mississippi, Louisiana and Texas. At the turn of the century, the tapping of the pine forests of Mississippi, Louisiana and Texas gained in importance for a time, until they, too, were largely exploited. At present, it is Georgia which produces the most resin, with Florida in second place and Alabama contributing but a small amount.

Originally the box system was used for the extraction of turpentine in the U.S., a process severely damaging to the tree. The name of this technique comes from the cavity or box that is chopped into the tree trunk about 12 to 16 inches above the ground at the beginning of

°Research chemist, Dragoco, Holzminden, Germany.

spring. Approximately 16 inches in width and up to six and a half inches in depth, it holds at least a quart of turpentine. First the trunk is barked right into the sapwood along the whole width of the box and at a height of about eight inches, causing the exudation of resin shortly thereafter. Throughout a period of from one to two weeks, new parts of the trunk are barked so that the tapped spots—especially after several years of use—go higher and higher up. In the autumn, the resin which last oozed out and dried hard is scraped off. In the following spring, the same spot can be slashed again for another resin flow, or the trunk can be tapped at another place. From two to five boxes on the same trunk were not uncommon.

Worthy of note is the fact that the slashes, often as long as 13 to 16 inches, were considerable in depth, exposing the exuded resin to air for long periods and causing a lot of the oil to evaporate and the resin to turn dark. Such deep cavities in the trunks also increased the danger that the trees might snap in wind storms. Furthermore, the resin accumulated in the boxes easily caught fire whenever grass fires broke out in the dry summers. The trunks, once they had been slashed were of no use for processing in sawmills because of the deep resinous holes. The tree died after four or five years and had to be felled.

All of these disadvantages led, beginning with the end of the last century, to attempts at improving production techniques. These resulted in the development of the cup system, first tried out on a larger scale at the beginning of this century. Here the drawbacks of the old procedure were avoided, and it now became possible to tap the trees for a period of fifteen or twenty years before they died. Within a few years, the old box system that had been in use for two centuries was succeeded by the cup system.

In principle the cup technique is an adaptation of the old box system, but instead of catching the turpentine resin in a cavity of the tree, it is collected in a container fastened to the trunk. At the bottom of the tap, two tin troughs are affixed which conduct the resin into the cup. At first, cups of clay or glass shaped like flower pots were used, but they have gone out of fashion because they are too fragile. Many of the cups were torn down by animals, and even if care were taken, many were broken, with loss of the resin they contained. Thirty-two million cups were used up in one year alone.

Nowadays, box-like elongated containers of tin or aluminum, with a flat bottom and a capacity of about three to five pints, are used. They are clamped between a nail and one of the two metal troughs, and can be easily taken down.

First, trees are selected with a diameter of more than ten inches and a height of about three to five feet. The cups are put into position during the period between December and February. A first strip of bark, the guide strip, is peeled off. This first gash during the winter fallow time supposedly results in a better resin yield. Tapping then begins in March or April. At a height of from 14 to 18 inches above the ground, a strip of bark from 8 to 12 inches in width and about 8 inches in height is removed, as deep as the sapwood.

Then two metal strips about 2½ inches wide are placed about half an inch deep in the trunk in such a way that one of them is above the container and holds it fast, while the other one runs obliquely from the side to the trough below. Both together take up the entire width of the peeled gash. From week to week, for a total of about thirty times during the season, the bark at the top is peeled off somewhat further, with this upward extension of the wound amounting to about 15½ inches each year. Specially formed mattocks are used for this barking of the trunk; easily manipulated by skilled workers, they wound the trunk no deeper than is necessary for a good resin yield. One man can take care of from 5000 to 7000 taps per week.

Chemical stimulants provoking a stronger resin flow have also been used for about twenty-five years now. Nowadays 50 per cent sulfuric acid, scattered finely for about one cc., is generally used. Approximately 10 per cent of the trees tapped are previously treated in this manner. One advantage of stimulation with chemical agents is that only the bark need be removed and the wood does not have to be scraped to a depth of about half an inch. By means of the stimulant the resin ducts in the wood are opened up, so that the resin can flow out. Injury caused by chemicals, especially by sulfuric acid, is, however, not as easily overcome by the organism as a mechanical wound, as is shown by the fact that in such cases the resin flow continues for ten days or longer, whereas a normal gash provokes flow for five or six days only.

Sulfuric acid seriously attacks the cambium layer underneath the bark, destroying the horizontal, thin-walled parenchymal resin ducts as well. Resin exudation, as a defensive reaction of the tree, can ovecome mechanical injuries within a few days; for this reason the flow has to be set going again by a new injury. But the destruction caused by sulfuric acid is prolonged by the gradual penetration of the acid into the inner layers and is therefore much more far-reaching.

The wood of the pines is interlaced with large vertical and smaller horizontal resin reservoirs and ducts, with the horizontal ducts extending into the cambium and

ESSENTIAL OILS OF THE CONIFERS: PART II

ordinarily closed by parenchymal cells. All these containers and channels are connected with each other like a supply network. Why conifers deposit turpentine in their wood is not yet known. In all probability it is an excretion, i.e. a material separated during the life-process of the plant that is not taken up into it again.

The turpentine which overflows from the injuries is at first a clear, transparent fluid. Even while running down from the trunk to the cup, it becomes thicker and partly crystallizes. Normal turpentine then results. As mentioned above, further processing was originally undertaken in order to obtain pitch for the building and caulking of wooden ships. Turpentine oil played a small role only here. The distillation at first performed when demand became greater, done in iron retorts, was abandoned in 1834 in favor of fire-heated copper stills and copper condensers, resulting in an improvement of the quality of the turpentine oil and colophony. The head of the stills, with a capacity of about 500 to 1000 gallons, could be taken off and easily connected with the still and condenser. The stills were charged with the raw turpentine resin and all its impurities, whereupon distillation began.

As the oleoresin naturally contains a certain amount of water (5-10 per cent), turpentine oil at first was distilled over with water. When the amount of water in the still lessened—(this can be recognized by the peculiar sound heard if the ear is held to the condenser vent)—warm water was admitted through a connecting pipe at the still-head and distillation was continued. When distillation was ended, the turpentine oil was separated from the water and poured into storage tanks. Once the last amounts of water had settled out, it could be run off into vats and brought for shipment. The melted colophony contained in the still, with its residue of impurities such as pine needles, pieces of bark and wood, etc., was emptied out through a cock on the bottom and passed through various sieves and, at the last, layers of cotton that retained the coarser impurities. While still warm it was poured into wooden or iron barrels, where it became firm and was ready for sale. The distillation of from 400 to 530 gallons of turpentine resin took about three hours.

The advantages of this older procedure lay in the mobility of the distillation stills and the comparatively slight cost of procuring them. If the tapping points shifted, the provisionally installed stills could easily be brought elsewhere. The disadvantages of this method were the dark coloration and the cloudiness of the oleoresin due to the impurities, frequent fires as a result of the bad walling-up, and distinct losses of oleoresin during the various operations. In addition, the turpentine oil obtained was a pretty raw product. In the course of time, improvements were introduced, but considerable skill and experience on the part of the distillers was required in order to get a light, pure resin. Compared with the 2500 stills of this kind that were in use in the heyday of this processing technique, no more than a hundred stills using this outmoded method exist today.

Change of Procedure

Since the thirties, there has been a change-over to another, more factory-like procedure. The new method consists of two different processes: the purification of the oleoresin, and distillation. As the lighter kinds of colophony are more in demand than the darker ones, and as it is known that the dark coloration can be ascribed to the dirt involved in processing, it was evident that oleoresin ought to be purified before distillation. The solution of the problem of filtering a very viscous and tough material was found when the raw turpentine was dissolved in enough turpentine oil to make a dilution that would flow and could thus be filtered. The raw turpentine is dissolved in special melting compartments of stainless steel with steam casings, in turpentine oil sufficient to produce a mixture containing from 35 to 40 per cent of the oil. After about a half-hour of heating at temperatures of from 90 to 100° C., everything is dissolved. The mixture, to which are added kieselguhr as a filter-stuff and some oxalic acid for the removal of iron, is forced under pressure through sieves in order to get rid of the coarser impurities, and then through cloth or paper filters. After being filtered, it is washed with water at 80-90° C. in large containers of stainless steel, in order thoroughly to remove water-soluble impurities such as the sugars from the sap of the conifers and the oxalic acid. The mixture is then left to stand overnight, with a ten-degree drop in temperature, and the washing water is drawn off.

Distillation of the Oleoresin

The purified oleoresin solution is pressed for distillation into a still of stainless steel having a capacity of from 1000 to 2100 gallons. The still is heated by steam coils, and steam is supplied directly through a steam ring with fine jets. It is connected through a dephlegmator, which keeps back oleoresin acids being distilled in the process, with a pipe refrigerator in which the distillate condenses. After heating is started, enough steam is added to make equal proportions of water and turpentine oil distill over. In the course of distillation, the temperature of the contents rises, and more steam is introduced in order to separate the high-boiling last runnings as well. The latter, along with the first portions of the next distillation run, are separated, as they may contain some colophonic acid. They are combined and used for dissolving new lots of oleoresin. The distilled middle fraction of turpentine oil is freed from small amounts of water in a vat with table salt and is then collected into large containers holding from 5,280 to 10,569 gallons. The shipping barrels are filled from these. The colophony remaining in the still is also pressed into storage containers and poured from them after having cooled a bit. More than 90 per cent of total American output is at present processed in this way. There are some 30 centrally located installations of the kind described.

A particular advantage for the working-up process revealed after erection of the large installations stems from the fact that nowadays many more small farmers are carrying on tapping than was formerly the case. Against about 300 small resin producers in 1930, there are today more than 40,000 who send their resin to the large distilleries. For the small farmers with but a few hundred trees, whose resin yield hardly justifies setting up their own distillery, tapping is now attractive for various reasons. Most of the work has to be done during the times when there is little to be done in the fields. Regular resin delivery is a steady source of cash. It is thus easy to understand the changes that have occurred in obtaining resin.

A number of interesting studies have been published on the differences in the oleoresin and oil yield from the various American pines. In summary it may be said that only pines with a diameter of from 10 to 12 inches at about 3½ to 5 feet from the ground can be expected to give a satisfactory resin yield. With younger, thinner trunks the return is so slight that tapping scarcely pays. But even among trees equal in strength the yield can vary by 25 or 30 per cent. That is why nowadays a selection of pines richest in oleoresin is made. The average oil yield amounts to 20 per cent, the colophony yield anywhere from 60 to 70 per cent.

TECHNOLOGY OF MODERN OXIDATION HAIR DYES

PART III

GUS S. KASS
Technical Director, Lanolin Plus, Inc.

Most of the hair colorings of the oxidation type are quite alkaline and this is necessary for two reasons. First, oxidation of the dye intermediates occurs best on the alkaline side, and secondly the alkali serves to soften and swell the hair making it more receptive to the dye. Ammonia has long been the preferred alkalizing agent because it softens the hair quickly without damaging it as fixed alkalis are prone to do. There is more to it than just pH. In most cases a dye that has been adjusted to a given pH with ammonia will color hair with deeper and more uniform shades than the same dye composition adjusted to the same pH with fixed alkali. In dye compositions that both color the hair and bleach the natural hair pigment at the same time, more effective bleaching results when ammonia is used as the alkali. Mono-, di-, and triethanolamine as well as other alkanolamines are used in hair dye compositions either alone, or with other fixed alkali or ammonia. A British patent[36] claims improved dyeings without hair damage when oxidation hair dyes use triethanolamine at a pH of 7 to 9 together with a polyhydroxy compound such as sorbitol, pentaerythritol or glycerine and buffered with ammonium salts or free ammonia.

Most oxidation dyes are adjusted to a pH of 9.0 to 10.0 with ammonia. Those dyes on the market with a pH as low as 7.5 to 8.0 require pre-bleaching to obtain the desired shades. It is the pH of the hair dye-peroxide mixture that is important and not the pH of the dye composition as packaged. One pH value might not necessarily be used for an entire range of shades because the optimum pH for each shade is sometimes different. Depending on the results desired, there is an optimum pH for each formulation and shade. Hair coloring shades such as steel grey, platinum, silver blonde, etc. that contain blue forming dye intermediates are very sensitive to pH changes and the optimum pH value must be carefully determined. A steel grey hair coloring, for example, might impart a beautiful shade to hair at a pH of 8.5 or 8.7 and be a complete washout at 9.0.

At this point a word of caution is in order. Ammonia is a rubefacient and stimulant on the skin and can cause painful "burns." When applied to the scalp that has been washed free of the natural oils by a shampoo, ammonia can be very irritating. It has been found by experience that the hair dye-developer mixture that is applied to the hair should not have an ammonia content exceeding 1.0%. If the dye composition is one that is mixed with equal parts of liquid developer before use, it should not contain more than 2.0% of free ammonia. The only dye compositions that may have this much ammonia in them are those products that dye and bleach the hair at the same time.

DYE-BLEACH PREPARATIONS

Many of the newer hair coloring compositions available for both professional and home use, bleach the natural pigment while dyeing the hair. This may seem to be a rather incongruous situation at first but it does make sense. Bleaching of hair is usually accomplished by treatment with alkaline hydrogen peroxide, in which the alkali is usually ammonia. Oxidative dyeing of hair is accomplished by oxidizing, with hydrogen peroxide, an alkaline (usually ammoniacal) solution of dye intermedi-

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ates. Both processes can take place simultaneously. Products of this type have a high ammonia content so that a maximum amount of bleaching will take place in a minimum of time. It is not simply a matter of adding ammonia to a conventional hair dye or shampoo tint. The various shade formulations must be worked out with considerable care so that a well balanced product will result. Usually products of this type are formulated so that the lighter shades have greater bleaching activity than the dark shades. The colors deposited on the hair by the oxidation dyes are extremely resistant to alkaline hydrogen peroxide and therefore conventional hair bleaches have little if any effect on dyed hair.

Dye-bleach preparations are most effective in the hands of a skilled technician and home use by the woman who desires to color her own hair can lead to disillusionment unless the limitations of the product are explained in detail. The belief that any shade of hair can quickly and easily be dyed and bleached in one application of one hair coloring product to any desired shade is an erroneous one. In Table 1 were shown the eighteen popular shades divided into two groups of nine each—the drab shades and the warm shades. The drab shades can be bleached more readily than the warm shades which have considerable red in them. The ash browns and ash blondes are very easily bleached to golden blonde shades. Black and dark brown will bleach in one application to an auburn color while a reddish blonde will result when all but the lightest colors in the warm series are bleached, with the exception of the auburns which are very resistant to peroxide bleaching. When a combination dye-bleach is used, the final color effect is the sum total of the dye deposited on the hair plus the final color of the natural pigment. It is much easier to go from a light to a dark shade than from a dark to a light shade. A woman with dark brown hair who wishes to go to an ash blonde shade will find it an almost impossible task to accomplish in a single treatment. It can be done by first bleaching the hair to a light blonde shade and then applying an ash blonde shade or a drab toner. It is also easier to go from a drab shade to a warm one than to go from a warm shade to a drab one. Products of this type require detailed directions for the selection of the proper shade of dye as well as detailed directions for use.

THE COMPLETE HAIR DYE

THERE are so many variables involved in formulating a specific hair coloring that it would be impractical to show detailed formulae of each type of product in each of the many shades. The shade composition is approximately the same whether it is for a conventional dye, shampoo tint, color shampoo, cream coloring, or any of the other variations. The word "approximately" is used rather loosely. A composition of dye intermediates and additives developed for a particular base and application will not necessarily develop to the same shade if the base or method of application is changed. It may be necessary to make changes in the total intermediate concentration, pH, modifiers, or even replace certain intermediates with others. It must also be borne in mind that a specific shade can result from more than one combination of dye intermediates. Certain generalities can be made. The percent concentration of the dye intermediates and other additives should be kept as low as possible, and as few intermediates as possible should be used in making up the shade. Where one compound will do the job of two, use only the one. Simplification of the product will reduce the possibilities of trouble and when a difficulty does occur it is more easily traced. The following formulas are typical examples of an oxidation hair dye and each formula is broken down to show the

role played by each ingredient. The composition of the dye base was discussed earlier in this paper.

DARK ASH BLONDE

Dye base	60.00%	solvent
sodium sulphite	.30	antioxidant
p-phenylenediamine	.50	dye intermediates
o-aminophenol	.10	
p-aminodiphenylamine	.05	
p-aminophenol	.10	
4-nitro-1,2,-diaminobenzene	.20	
2,4-diaminoanisole	.025	color modifier
resorcinol	.50	modifier and stabilizer
ammonium hydroxide to pH 9.5		alkali
Dye base to make	100.00%	solvent

MEDIUM BROWN

Dye base	60.00%	solvent
sodium sulphite	.40	antioxidant
p-phenylenediamine	2.00	dye intermediates
p-aminodiphenylamine	0.20	
o-aminophenol	0.20	
4-nitro-1,2-diaminobenzene	.15	
resorcinol	1.00	modifier and stabilizer
ammonium hydroxide to pH 9.2		alkali
Base to make	100.00%	solvent

HONEY BLONDE

Dye base	60.00%	solvent
sodium sulphite	.20	antioxidant
p-phenylenediamine	.20	dye intermediates
p-methylaminophenol sulphate	.40	
p-aminodiphenylamine	.10	
o-aminophenol	.13	
resorcinol	.20	modifier and stabilizer
pyrogallol	.20	stabilizer
borax	.40	alkali
ammonium hydroxide to pH 9.0		alkali
Dye base to make	100.00%	solvent

The Developer

So far in this study of oxidation dyes the developer has been mentioned many times but without a detailed explanation of its composition, its role in the oxidation process, and the many potential problems connected with it. Bear in mind however, that the hair dye is useless without the developer and that the hair dyeing process is the result of a controlled chemical reaction between the hair dye and the developer on the hair. This paper would not be complete without an examination of this oxidation reaction.

The product referred to as the developer is an oxidizing agent and is usually a solution of hydrogen peroxide. Other oxidizing agents have been tried such as chlorates, persulphates, perborates and others but they do not measure up to hydrogen peroxide for ease of use, completeness of the oxidation reaction, safety, and absence of undesirable by-products. The use of persulphates to develop oxidation hair dyes was the subject of an early French patent[37] and a mixture of a persulphate salt and an alkaline perborate was patented[38] in 1922. Even sodium dichromate has been recommended as an oxidation dye developer. A British patent[39] was granted for rinsing hair with a sodium dichromate solution after the hair had been shampooed with a soap containing p-phenylenediamine. The dichromate oxidized the diamine

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to a black dye on the hair. Urea peroxide has been used extensively in Europe and is used to some extent in this country. This is a white crystalline solid with the composition $CO(NH_2)_2 \cdot H_2O_2$ that usually contains 34-35% of hydrogen peroxide. It is very soluble in water where it decomposes into hydrogen peroxide and water but a major drawback to its use is it's instability in air. It readily absorbs moisture from the air and decomposes rather rapidly. For this reason it is usually marketed as compressed tablets which are individually sealed in plastic film.

Hydrogen Peroxide as the Developer

Almost all oxidation dyes use twenty volume (6%) hydrogen peroxide as the developer which may or may not be packaged with the hair coloring. Since there is a danger of hydrogen peroxide solution losing its strength if kept on the dealer's shelves too long, most makers do not package the peroxide with the dye but recommend that users buy fresh peroxide directly before use. Peroxide solutions stronger than twenty volume have occasionally been used but it is not advisable to do so. When strong hydrogen peroxide solution is applied to the skin it will produce a chemical burn which manifests itself by whitening of the skin accompanied by a burning sensation. Peroxide solutions less than fifteen volumes ($4\frac{1}{2}$%) in strength usually do not burn. The twenty volume peroxide which is used as the developer for most oxidation dyes should be handled carefully by the user to avoid contact with the skin.

Most oxidation dyes are mixed just before use with the equal parts of the peroxide developer but some colorings on the market use $1\frac{1}{2}$ and even 2 parts of the developer. These latter products are generally of the type that bleach and dye the hair in one application. Unless the oxidation dye has been specifically formulated to dye and bleach the hair any bleaching of the hair during the dyeing process is most undesirable. Some bleaching can occur especially if ammonia has been used as the alkali and the pH of the dye-peroxide mixture that is applied to the hair is above 9.0.

It is a well known fact that solutions of hydrogen peroxide are rather unstable and that contact with many substances can trigger rapid decomposition. Even minute traces of heavy metals or metal salts will do this. In most cases, rapid decomposition of hydrogen peroxide when mixed with the oxidation dye is *not* desired. Such decomposition is evident when the dye-peroxide mixture gases, foams, or gets very warm. Rapid peroxide decomposition is often accompanied by incomplete oxidation of the dye intermediates and this in turn can result in hair colors that are not true to shade and are unstable. Partially oxidized dye intermediates can also result and these may be skin irritants.

In a well formulated oxidation dye, the dye intermediates will be completely oxidized in 50 to 60 minutes or less and the dye-peroxide mixture will contain some unreacted hydrogen peroxide at the end of this period. Why is such a situation desirable? Let us assume for the sake of argument that the hair dye in question is for professional use and that complete color development will require twenty minutes on the hair. A skilled technician can apply the dye in 10 minutes or less. The dye-peroxide mixture is not usually poured over the hair like a shampoo (it sometimes is in the case of color shampoos) but it is applied to one section of hair at a time until the entire head is done. This means that the last section of hair that is treated will be in contact with the developing dye for a shorter time than the first section and will be treated with a dye solution that has been undergoing oxidation for perhaps ten minutes before it is applied to the hair. Under these conditions, which are optimum ones, we still expect the entire head of hair to dye to the same shade if the oxidation dye has been properly formulated. So when we add up the normal development time, plus the time required to apply the dye mixture, plus time to allow for variations in technique, affinity of the dye for the hair, etc. we end up with a minimum period of 40 or 50 minutes before oxidation of the dye is complete. The oxidation is not an immediate reaction and the oxidation rate is governed by such factors as pH, concentration of intermediates, temperature and others. An important fact to remember is that *the dyeing of hair will not occur unless oxidation of the dye intermediates takes place on the hair.* The dye that forms in the dye-peroxide bath has no affinity for hair. This can be demonstrated by treating some hair with the dye-peroxide mixture immediately after mixing the two and then treating hair with the same mixture 40 or 50 minutes later. The second hair swatch will have absorbed little, if any, color.

It was pointed out before that when a head of hair is dyed with most oxidation colors, the first section of hair to which the dye is applied, is in contact with the developing intermediates for a longer period than the last section. The time difference is the length of time it takes to apply the coloring to the entire head. In a beauty shop this time difference will average from 6-10 minutes but it may be as much as twenty minutes for the woman who is dyeing her own hair at home. The question then arises; isn't there a variation in the depth of color on the hair as a result of this time difference? If it is a well formulated hair dye, the answer is no. The reason for this is that color development on the hair usually proceeds quite rapidly at first and then slows down. Where the full color develops in say twenty or thirty minutes an additional five or ten minutes should add very little to the color already there. In the case of a product that both bleaches and dyes the hair, the bleaching of the natural pigment can often continue after maximum color development has been reached. All new oxidation dye formulations must be laboratory tested and tested on models to determine and establish the oxidation rate and the effective life of the dye-peroxide mixture.

Oxidation Dyes Still the Best

Oxidation dyes after 50 years are still the best hair colorings available. No satisfactory method of dyeing human hair has been developed that can replace the oxidation dyes in spite of the fact that many other dyeing agents and techniques have been investigated. Although the basic principles of oxidative dyeing have remained unchanged for more than half a century research and development have produced hair coloring preparations that are safe to use, are available in a great range of shades, and that color the hair quickly in lasting, natural shades.

But what of the future? Until a better method of dyeing human hair comes along, the oxidation dyes will remain of paramount importance to chemists and cosmetic manufacturers who are interested in the expanding hair coloring market. The search for new and better methods of dyeing hair will go on but so will research into improving the oxidation dyes. Those of us who have worked with hair coloring recognize that many problems and difficulties lie along the way but we are also aware of the tremendous potential market for better hair coloring products.

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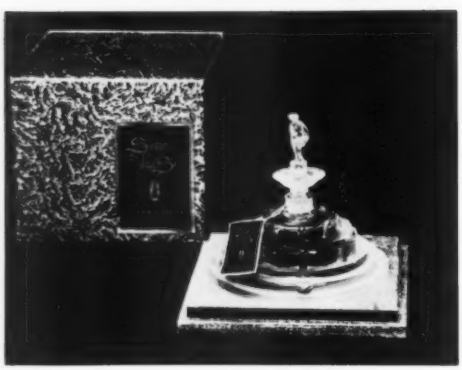


1.

1. MARY CHESS

Newest of the Mary Chess perfumes is Souvenir d'un Soir. It comes in a lalique-type glass bottle, which though designed in France is a miniature reproduction of the famous fountain in front of the Plaza Hotel in New York City. It is contained in a black and gold box which harmonizes with the black and gold tab label on the bottle. On the back of the label is the perfume's message . . . "May the fountain at the Plaza—one of New York's most beautiful landmarks—bring back to you the Memory of an Evening . . . Souvenir d'un Soir." The price is $45 for two ounces; $10 for one-fourth ounce.

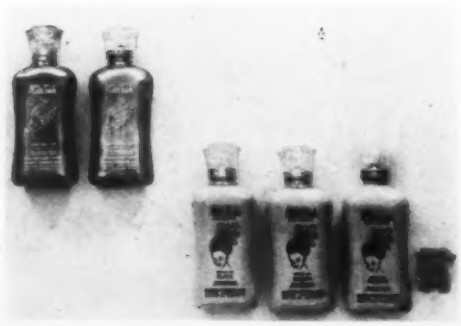
2.

2. MARIO RIGAUD

Mario Rigaud of Paris had designed a purse size miniature spray which holds one-quarter ounce of Un Air Embaume perfume. The tiny aerosol spray is designed to evenly cover areas hard to reach otherwise. The container is black and gold metal, and said to be leakproof. The spray with perfume sells for $5 plus tax, comes apart for refill. The refill bottle is $3.75 plus tax.

3. HARRIET HUBBARD AYER

The Midas Touch color family of Harriet Hubbard Ayer has been enlarged. In addition to gold and silver used for dramatic streaking and accenting of the hair, three new shades are now available—black, brown and auburn. The product comes in a plastic-coated bottle with a spray top for easy application. Midas Touch is a temporary coloring which is removed by a shampoo. The price is $1.50 per bottle.



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4. PRINCE MATCHABELLI

Prince Matchabelli's newest perfume, Added Attraction, will be in the stores on October 1. It comes in a gold-decorated crown bottle, which for this particular perfume is rich royal red in color. The bottle is nested in white satin in a snap-lid jewel box that is covered with red velvet. It sells at $17.50 for one ounce; $10 for one-half ounce; $6 for one-fourth ounce. The crown embossed purse dispenser is $3.

5. MYRUGIA

The Spanish house of Myrugia has created a new cologne, Bleuor. It is said to belong to the old European tradition of

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cologne, the cologne enjoyed primarily as a pleasantly scented body stimulant. A 6 3/4 ounce flacon is $4.

6. HELENA RUBINSTEIN

Holiday Foam Bath from Helena Rubinstein, Inc. comes in a bottle contained in an attractive multi-stripe wrap. It is available in four fragrances: Heaven-Sent, Fourth Dimension, Moonlight Mist, and Five O'Clock. The price is $3.

7. GERMAINE MONTEIL

Germaine Monteil put on sale on September 1 a new offering, Idol-Eyes Make-up. The eye shadow is a creamy, crayon-type stick which comes in a gold retractable case. The mascara is said to be waterproof and not to rub off, but is removable with any of three Germaine Monteil cleansers. It is packaged in a kit with brush in a frosted plastic container. The shadow stick comes in five shades with an overglow of pearl at $2. The mascara is available in black, brown and blue at $1.50.

7.

8. BARBARA GOULD

Barbara Gould has introduced a Beauty-Tote for the woman on the go. The kit has a waterproof white and silver "shell finish" case lined in pale blue washable linen. All the bottles are miniatures of the standard size containers, and each product is held in place by means of a transparent compartment. Total length of the kit is 7 1/4 inches. It contains six cosmetics: liquid cleanser, skin freshener, Act of Beauty (fluid moisture cream), liquid foundation, face powder and lipstick. The price is $5.

8.

9. RICHARD HUDNUT

New Pin-Quick, a pin-curl permanent which its manufacturer says is "guaranteed to last longer than any other or your money back" has been presented by the Lambert-Hudnut division of the Warner-Lambert Pharmaceutical Co. Included in the set is a conditioner with silicone. It sells for $1.50 plus tax.

9.

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I-Quiz

This Month's Quiz Master

Ralph G. Harry

Author of "Modern Cosmeticology" and "Cosmetic Materials"; Research and Development Chemist, International Chemical Co., Ltd., London, England.

QUESTION I. *Is the difference between American, British and European-type cosmetics as wide now as prior to World War II?*

ANSWER. No, as far as British and U. S. cosmetics are concerned. During the war and a while after, differences did exist because of development work in the United States and the unavailability of certain raw materials in Britain.

QUESTION II. *What was the difference?*

ANSWER. In the late twenties and early thirties the differences between British, French and U. S. cosmetics were not very great as make-up for the average woman tended to be limited to a little foundation cream and powder, although a certain amount of lipstick was also used. The Americans were the first to commercialize the make-up experience they had gained during the development of the motion picture industry. Also because of the severe weather conditions and the prevalence of central heating, the Americans became conscious of the "dry skin" problem and the emollient creams and lipsticks they developed proved satisfactory in Europe as well as at home. Thus, the United States began to set the fashion in cosmetics for the rest of the world. Their development of the aerosol and the "teen age" markets entrenched them in an even stronger position. Largely because of research and development work of long terms, America has become the fashion center for many new technical developments in the cosmetic field. With the advantages of a community of speech, the establishment of British subsidiaries or branches of American companies and the free interchange of technical information through technical publications, the differences between American and British cosmetics have for the most part disappeared.

QUESTION III. *What suggestions would you make to American companies thinking of doing business in England in the way of changing their products?*

ANSWER. Apart from its technical excellence, a successful product on the British market must suggest "glamour." With the high purchase tax, price as well as presentation is important in the cheaper markets. There is a market in this country for preparations especially designed for the "teen ager." Far too few of the older women use cosmetic preparations. Sell cosmetics to the teen agers of today, and you will sell cosmetics to the mothers and the children of tomorrow!

...AND IMRA, BOTH HIGHLY ACCLAIMED!
A cosmetic and packaging designed to keep women happy, beautiful and hair-free. *Imra*, product of Union Pharmaceutical Co., Inc., an ultra-modern depilatory for fastidious women, is safe even on delicate facial areas! Conveniently packaged in equally modern containers... *Sheffield Process* collapsible tubes, in which all products sell better! Make Sheffield your next order.

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FACTS ABOUT *effects* OF EDTA ON SOAP

PAUL I. SMITH

ETHYLENE diamine tetra acetic acid, commonly known as EDTA as well as many other generic and trade or proprietary names, has received very wide publicity in the scientific and trade press. Whilst there is no doubt that this complex organic chemical is extremely valuable as a chelating agent, many extraordinary and inflated claims have been made for it and it is, therefore, worthwhile to examine its usefulness in the manufacture of soap and soap products.

In general, the most important characteristic of EDTA salts is their ability when in aqueous solutions to prevent the precipitation of calcium and magnesium soaps from hard water and also to redissolve such soaps once they are formed. Of considerable value to the soaper is the property which EDTA salts possess of clarifying liquid soaps, such as shampoos and other specialised products, and increasing their sales appeal. There is very much less tendency for soap solutions to throw out ugly sediments or to develop cloudiness when EDTA salts are present, moreover, the toxic effects are claimed to be negligible.

Other claims made for EDTA include improved foam stability, but this in general appears to apply more to sulphonated detergents than to soaps. Apart, however, from the better known characteristics described above, EDTA is particularly useful to soap manufacturers who use water containing traces of iron, which is liable to discolour soaps and to interfere seriously with their keeping qualities. The chelating agent possess the unique property of inhibiting trace element effects and thus preventing the iron or copper constituent of the water from having any harmful action on the soap.

One claim sometimes made for EDTA is that when used alongside approved anti-oxidants, it improves their efficiency and reduces still further the risk of spoilage. This is known to be true where there is danger of catalytic oxidation due to the presence of trace metals, but not so convincingly proved when spoilage is due to other causes not associated with the presence of metallic impurities. Certainly, there is plenty of evidence to support the claim that the presence of EDTA does reduce the risk of deterioration in soap due to the presence of copper as well as iron. No claim can, however, be made that EDTA has any noticeable effect on reducing spoilage of soap due to micro-organisms, such as moulds.

Air in Soap

A CERTAIN amount of air is bound to be trapped in soap during manufacture and usually this causes no trouble whatever. It is only when the air exceeds 5-10 cc per 100 grams that it really becomes a nuisance and causes difficulty in tabletting and packing. A safe maximum amount of air occlusion in soap should not exceed a figure of 3 and most soapers are content when this is not exceeded. The greatest nuisance value attached to air occlusion is that no one in the plant appreciates its presence until it is too late.

The best way to prevent the accidental trapping of air in soap is to

take every possible precaution of minimizing contact, e.g., by reducing the height of flow if liquid soap is poured from one vessel to another; by so designing agitating devices that air is not forced into the molten soap so as to form emulsions of air in soap; by keeping the surface of soap mixtures smooth and of even texture so that the risk of air being absorbed is reduced to a negligible factor.

Probably the greatest risk of air being occluded in soap takes place in the soap pan, either during the actual process of saponification or during the pumping of the fitted soap. Frequent testing at different stages of processing will determine the most critical stage and once this is found out, the problem can be scientifically studied. Soapers with experience of air occlusion generally agree that trouble is usually traced to changes in procedure which, although apparently slight, may mean that soap surfaces come into contact with the atmosphere for longer periods or greater areas are exposed.

Aqua Velva is Now Ice Blue

The J. B. Williams Co. has announced that 'Aqua Velva,' claimed to be the oldest and biggest selling nationally distributed after shave lotion, will soon be replaced by 'Ice Blue Aqua Velva,' "the newest and most modern product of its kind on the market."

Hailing the new lotion as "not just another hopeful entry in the after shave lotion field," the Williams Co. said the new item is expected to capture an even larger share of consumer dollars than its predecessor, 'Aqua Velva.'

'Ice Blue Aqua Velva' is the result of extensive experimentation carried on by the Williams Co. staff, plus such independent experts as van-Ameringen-Haebler, the firm explains.

The company's confidence in the new product, it is stated, is based on exhaustive comparison tests against top competition. The new product was decisively favored, it is reported, on the following accounts: packaging, color, feeling on face, aroma, healing effect, cooling effect, relief from burn and lasting quality.

Strong Gain in Soap and Detergent Sales

A strong gain in the sale of soap and synthetic detergents is reported for the first six months of 1956. Sales are up 15.3 per cent in pounds and 11.7 per cent in dollar value compared to 1955 according to the industry census compiled quarterly by the Assn. of American Soap and Glycerine Producers, from data submitted by 74 of its member companies. The sharpest gain for the six months in any of the product classifications is in liquid synthetic detergents with an increase in pounds sold of 86.2 per cent. Total synthetic detergents sales, solid and liquid, increased 25.4 per cent. Despite these increases in synthetic detergents, the total sales of soap showed little decline, off 1.5 per cent. Totals for the principal product classifications are as follows:

Soaps and syndets, 2,026,012,000 pounds for the first half of 1956, up 15.3% from the first half of 1955; solid soaps and syndets, 1,877,396,000 pounds, up 12.5%; liquid soaps and syndets, 148,616,000 pounds, up 67.4%; solid and liquid syndets, 1,376,311,000, up 25.4%; solid and liquid soaps, 649,701,000 pounds, down 1.5%; solid soap, 631,157,000 pounds, down 1.5%; liquid soap, 18,544,000 pounds, down 1.9%; solid syndets, 1,246,239,000 pounds, up 21.3%; and liquid syndets, 130,072,000 pounds, up 86.2%.

Dollar sales of all soaps and syndets for the first half of 1956 were $456,765,000, up 11.7% from the first half of 1955; all soaps, $154,104,000, down 0.2%; and all syndets, $302,661,000, up 19%.

New Research Lab Planned by U. S. Borax & Chemical

Anaheim, California has been selected as the site for a modern research laboratory for United States Borax & Chemical Corp. In addition to numerous standard laboratories, special facilities will include a distillation room, instrument laboratory, heavy experimental equipment room, and a greenhouse for agricultural investigations. Construction is scheduled to begin this month, with completion expected in April, 1957.

Change in Corporate Name of Stiefel Medicinal Soap Co.

In view of planned diversification in the ethical pharmaceutical field, the officers and directors of the Stiefel Medicinal Soap Co., Inc. have announced a change in the corporate name to Stiefel Laboratories, Inc.

Will & Baumer Now in Second Century of Life

Will & Baumer Candle Co. of Syracuse, N. Y. completed its 101st year of business on August 31. One of the oldest processors and marketers of beeswax, the firm was founded in 1855 by Anton Will, grandfather of the current president, Howard C. Will. Until Anton Will's time, candlemaking in America was a domestic art and the best candles were imported. In 1855, however, the company commercially produced the first pure beeswax church candles in the United States.

TRADE LITERATURE

Fritzsche Brothers, Inc. has released a price list of its products. The sections are indexed under: essential oils; sesquiterpeneless and terpenless oils; citrus concentrates; floral absolutes; floral concretes; aromatic chemicals; animal fixatives; resinold fixatives; tinctures; oleoresins; balsams, gums and sundries; and colors. Also available from the company is a special flavors catalog containing comprehensive listing, prices and descriptions of its complete line of flavors.

Glass Containers as Packages for Low Pressure Aerosols is issued by Brockway Glass Co., Inc. Among the advantages for glass packaging which are listed are inertness to nearly all materials, low cost, and a variety of designs. Discussed are the basic strength of glass, siliconed glass containers, aerosol glass containers, and design.

The National Wholesale Druggists' Assn. announces the publication of a new drug trade market data book. The 100 page sales tool contains the latest official drug store sales figures, drug store count and family count by counties. These data are related to the revised NWDA distribution map of the United States which is part of the book and which shows 37 primary areas of wholesale drug influence and other information of relevant interest.

Whittaker, Clark & Daniels, Inc. have announced the completion of the 1956 edition of "Whittaker's Cosmetic Materials." This loose leaf reference guide has been prepared as a service to the cosmetic industry. The contents of the book constitute 204 pages of detailed information on all of their cosmetic products, with special emphasis given to colors.

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The simplicity and beauty of silk screened white opal has an undeniable appeal where cosmetic packages are competing for attention. Or, if your product suggests its use, you may prefer our number 437 in decorated flint glass, either clear or frosted.

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Strawberry Flavors

Photo courtesy The Borden Co.

MORRIS B. JACOBS, Ph. D.

Preparation of imitation and artificial strawberry flavor a challenge to flavor formulator

IN a previous article in this section of *American Perfumer and Aromatics*, I detailed some of the 34 compounds or groups of compounds that may be present in strawberry flavor. There is no need to detail all of these components again.

In that article I also pointed out that there were a number of imitation and artificial flavors which are marketed and which vary in quality. This depends in great measure on the components comprising the flavor mixture.

It is clear from the complex nature of natural strawberry flavor that no simple formulation is likely to yield an imitation or artificial flavor that recaptures the natural effect or for that matter that is even adequate.

Imitation Flavor Components

Many years ago I made a study of the literature with respect to the formulations given for strawberry flavor. Some 12 of these are listed in *Synthetic Food Adjuncts* (*1*).

The principal components of the aliphatic groups in the suggested flavor mixtures were esters such as ethyl and isoamyl formates; ethyl and isoamyl acetates; the ethyl, isoamyl, and cyclhexyl butyrates; the isobutyl and isoamyl isovalerates; ethyl pelargonate, and the inner ester gamma-undecalactone.

In the aromatic groups one finds esters such as benzyl acetate, ethyl and benzyl benzoate, ethyl cinnamate, methyl salicylate; aldehydes such as benzaldehyde and cinnamaldehyde; ethers such as bromelia (ethyl 2-naphthyl ether) and butyl beta-naphthyl ether (ethyl 2-naphthyl ether); and other aromatic compounds like vanillin, and bourbonal (so-called ethyl vanillin), and still other compounds like ionone, geraniol, and of course, ethyl methylphenyl-glycidate.

In addition to these 25 compounds, some 53 other compounds have been suggested as suitable for use in strawberry flavor formulations. Among these are: Rhodinol, nerol, cinnamyl and cuminyl alcohols, diphenylmethane, the methyl, propyl, isopropyl, hexyl and geranyl formates; the isobutyl, rhodinyl, and penethyl acetates and dimethyl phen-ethyl carbinyl acetate; the isopropyl, isoamyl, and citronellyl propionates; the isopropyl, terpinyl, and benzyl butyrates; the isopropyl, isoamyl, neryl, and benzyl isobutyrates; terpinyl valerate and cyclohexyl isovalerate; isoamyl caproate; ethyl caprylate; ethyl succinate; methyl and phenethyl benzoates; ethyl phenylglycidate and other phenylglycidates; methyl and isobutyl cinnamates; methyl, ethyl, isobutyl, isoamyl, and benzyl salicylates; the aldehydes palmitic aldehyde and cumaldehyde; the ketones amyl methyl ketone, methylacetophenone, benzylacetone, benzalacetone, and methyl naphthyl ketone; and compounds of more than one functional group such as anethole, anisyl

formate, isoeugenyl, isoeugenyl methyl ether, and anisaldehyde.

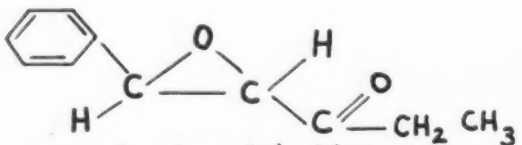
Strawberry "Aldehydes"

One group of compounds used in the preparation of strawberry flavors deserves special mention. These are the strawberry "aldehydes." As explained on a number of occasions in this Section, these compounds are not aldehydes and are not even closely related to aldehydes.

Toward the end of the 19th century and in the early part of the 20th century, certain substances with powerful odors and flavors had been discovered and synthesized. Since some aldehydes were known to have such powerful odors, the custom was adopted to call other powerful odorous compounds "aldehydes" even though they were not true aldehydes. Some of these materials were mixtures; some were single substances; and just as the "ether" nomenclature became common usage commercially so too did the "aldehyde" terminology.

One of the most surprising things about the pseudo aldehydes is that Glazer synthesized ethyl phenylglycidate as far back as 1868. This was done by reacting the silver salt of phenylglycidic acid with ethyl iodide. It was not until the beginning of the 20th century that the flavoring value of this compound was recognized.

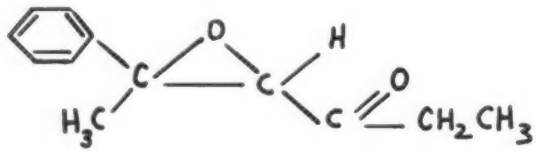
Ethyl phenylglycidate,



Ethyl phenylglycidate

one of the so-called Aldehyde C_{16}'s is a liquid with a specific gravity of 1.150. It boils at about 279.5 deg. C. with slight change, and about 1 volume is soluble in 2 volumes of 80 per cent ethyl alcohol. In the opinion of some flavor authorities, ethyl phenylglycidate has the best aroma of the strawberry "aldehydes." Among the other names by which it is designated are ethyl alpha, beta-epoxyhydrocinnamate and beta-phenylglycidic acid ethyl ester.

Back in 1904, Darzens (*3*) prepared ethyl methylphenylglycidate:



Ethyl methylphenylglycidate

which is also known as ethyl alpha, beta-epoxy-methylhydrocinnamate for the compound is considered to be a derivative of hydrocinnamic acid, which is also termed beta-phenylpropionic acid, $C_6H_5CH_2CH_2COOH$.

Some of the other names used for this substance are phenylmethylglycidic ester and alpha-methyl-alpha-phenylethylene-oxide carboxylic acid ethyl ester. In searching the literature it is necessary at times to search under each of these names.

In his synthesis, Darzens used acetophenone and chloroacetic acid in the presence of sodium methoxide. In other synthesis sodium amide may be used instead of sodium methoxide. Allen and Van Allan (*4*) have detailed a standard method of synthesis.

This compound has a specific gravity of about 1.096 and boils at 272-275 deg. C. It has a fatty odor and thus care must be exercised in using it as a component of flavor formulations. Some authorities do not consider it to have as fine a flavor or odor as ethyl phenylglycidate. It is one of the pseudo aldehydes and is available commercially as "so-called Aldehyde C_{16}."

It is an interesting side note to point out as I did in another article that when Darzens first synthesized this compound he described it as a weak fruity smelling liquid.

Compounds related to these have been synthesized, namely, the methyl homologues as noted by Benezet (*5*). Seldner (*6*) mentions the synthesis of ethyl beta-methyl-*p*-tolylglycidate and notes that it, too, has a strawberry character.

It is clear from the number of components given in the preceding sections that many strawberry formulations can be prepared which vary from relatively simple compositions containing few ingredients to very complex formulations. It is of interest, as I explained in my article on raspberry flavor to note the change from formulations which required natural oils to those which rely almost wholly on synthetic components.

As an illustration, we can refer to Walter (*7*) who suggested two formulations for strawberry basic "ethers" that is ester mixtures, the first presumably simulating the flavor obtained from cultivated strawberries comprising:

Amyl butyrate	1.5	lb.
Benzyl acetate	1.5	lb.
Ethyl acetate	1.0	lb.
Ethyl butyrate	1.0	lb.
Methyl salicylate	0.5	lb.
Amyl butyrate	0.5	lb.
Ethyl benzoate	6	oz.
Nerolin	4.5	oz.
Amyl formate	4	oz.
Ceylon cinnamon oil	12	drams
Coumarin	12	drams

and the second presumably simulating the flavor obtained from wild strawberries comprising:

Amyl acetate	3.0	lb.
Benzyl acetate	1.5	lb.
Ethyl acetate	1.5	lb.
Ethyl butyrate	0.5	lb.
Methyl salicylate	0.5	lb.
Ethyl benzoate	6	oz.
Nerolin	5	oz.
Coumarin	3.5	oz.
Vanillin	12	drams
Ceylon cinnamon oil	6	drams
Wintergreen oil	6	drams

Note that coumarin was used in the formulations noted

mousse des bois

A perfume base capturing the very soul of deep forest odours . . .
bracken and moss, shed leaves and moist earth —
all woven into a powerful and persistent fragrance;
a new base for heavy perfumes with a masculine appeal.

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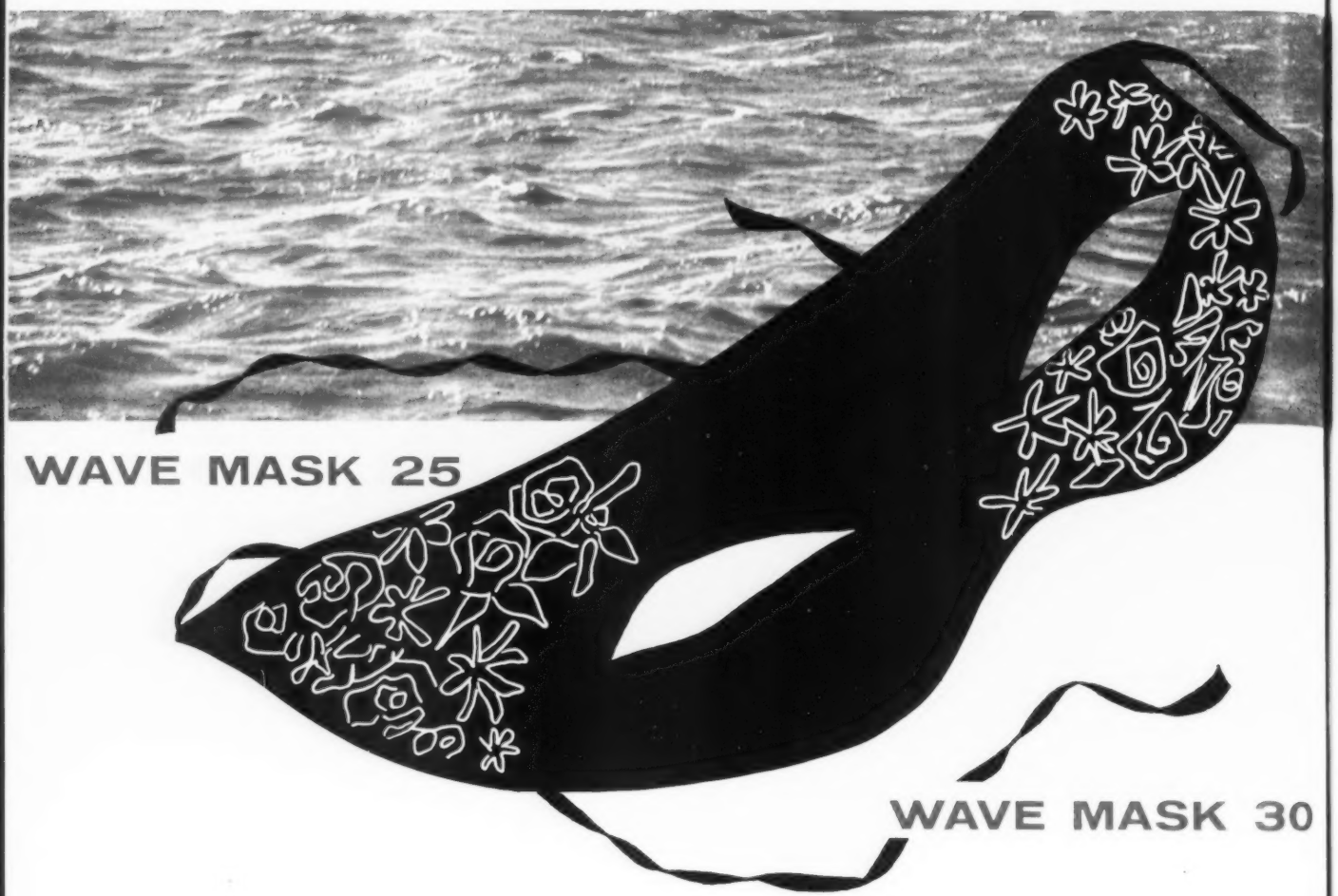
New Fragrances for Home Permanents



One of the greatest problems in the formulation of home permanents can now be met successfully with new Synfleur fragrances, WAVE MASK 25 and WAVE MASK 30.

Developed in the Synfleur laboratories after long and intensive research into the difficulties posed by the odor of these preparations, these new Synfleur fragrances have proven themselves ideal for the purpose. WAVE MASK 25 and WAVE MASK 30 were evolved by skilled Synfleur chemists and technicians as artistic formulations for cold wave preparations. They are based on essential oils and aromatic chemicals carefully screened for stability, compatibility and solubility.

These basic fragrances can also be adapted for effective, economical use in other thioglycolate products where similar masking problems are encountered. Our laboratories are at your disposal to assist in their incorporation. Simply ask for samples, data or other help – without obligation.

WAVE MASK 25
$3.00 the pound

WAVE MASK 30
$3.75 the pound

Founded 1889 by Alois Von Isakovics

Synfleur SCIENTIFIC LABORATORIES, INC.
MONTICELLO, N. Y.

above but would not be acceptable as a component.

Some 25 years ago Blumenthal (*8*) in his book on food manufacturing gave the following formulation:

Yara yara (10% solution in benzyl benzoate)	1 oz.
Amyl acetate	3 oz.
Aldehyde C_{14}	1.5 oz.
Iris concrete (10% solution)	0.75 oz.
Bitter almond flavor essence	1/20 oz.
Rose essence	1/20 oz.
Jasmine essence	1/100 oz.
Ionone	1/100 oz.
Bourbonal	1/12 oz.
Alcohol	16 oz.

As an example of a formulation in which all of the components are synthetic compounds may be quoted from Jacobs (*1*).

Isoamyl acetate	440
gamma-Undecalactone	220
Benzyl benzoate	134
Ethyl acetate	100
Bourbonal	40
Benzaldehyde	40
Ionone	14
Geraniol	12

This mixture of ingredients may then be diluted one volume to three with alcohol.

The influence that more modern thought has had on the formulation of strawberry flavors can be seen in the following strawberry formulation suggested by Benezet (*9*).

Ethyl methylphenylglycidate	400
Benzylidene isopropylidene	100
Ethyl acetone acetoacetate	80
Ethyl butyrate	50
p-Cresyl butyrate	50
Ethyl acetate	30
Ethyl caproate	20
Phenethyl butyrate	20
Yara yara	20
Vanillin	20
Ethyl Phenylacetate	20
beta-Naphthol butyrate	20
Essence of Portugal	20
Methyl naphthyl ketone	20
Maltol	14
Ethyl benzoate	10
Ethyl cinnamate	10
Nerol	10
Amyl acetate	10
Hexyl acetate	10
Coumarin substitute	10
Essence of iris concrete	10
Essence of neroli	10
Borneol	5
Bornyl acetate	5
Methyl anthranilate	5
Ethyl salicylate	5
Hexyl alcohol	5
Terpineol	5
Biacetyl	2
Pentanal	2
Isojasmone	2

In the Benezet formulation an attempt is made to incorporate in the composition those compounds that were isolated from natural products by Coppens and Hoejenbos (*10*), and the components of the formulations given above. Modifications of this formulation would undoubtedly also include the work of McGlumphy (*11*) and of Dimick and his coworkers (*12*).

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Assn. of Candy Technologists Reports on Annual Meeting

The American Assn. of Candy Technologists has issued a report on its annual meeting which was held recently at the Massachusetts Institute of Technology. Events at the meeting include the delivery of outstanding technical papers of interest to the candy manufacturers, and the presentation of the Stroud-Jordan Award to John M. Krno for outstanding contributions in the field of candy research. Also a highlight of the meeting was the decision of the membership to contribute $1,000 to support with the National Candy Assn. further research on candy at the Southern Regional Laboratory.

The new slate of officers of the association follows:

Otto Windt, E. J. Brach & Sons, president; C. R. Kroekel, Kroekel-Oetinger, Inc., 1st vice president; Hans F. Dresel, Felton Chemical Co., 2nd vice president; Edward N. Heinz, Jr., Food Materials Corp., secretary-treasurer; and Frank M. McIntire, Jr., T. H. Angermeier & Co., assistant secretary.

Councilors at large are Otto Glaser, Norman W. Kempf, James A. King, G. Lloyd Latten, Edward W. Meeker, and Charles F. Supplee.

Second Flavor Show Held in Japan

The Second Flavor Show will be held at the Tokyo Sangyo Kaikan in Tokyo September 20-23. Exhibitions will be presented both by Japanese and foreign flavor manufacturers. On behalf of the overseas participants, the Flavor Show Preparation Committee is carrying out all the actual arrangements and furnishing of the displays.

The show is being administered by three associations which touch almost all aspects of the flavor industry in Japan: The Japan Aerated Beverage Industry Assn., The Japan Confectionery Assn., and The Japan Confectionery Industry Cooperative Union Federation.

Secretary of Agriculture Increases Sugar Quotas

The Secretary of Agriculture has again increased the sugar quotas for 1956 by 125,000 short tons, raw value.

The sugar quota established by the Secretary of Agriculture was 8,325,000 short tons for the fiscal year of 1956. In April, quotas were increased 100,000 tons. This last increase of 125,000 tons brings the sugar quotas up to 8,575,000 short tons.

Newly Developed

FLAVORING AROMATICS

General guidance in the utilization of the newer aromatics with comments on the organoleptic and olfactory characteristics

DR. ALEXANDER KATZ°

NEWLY discovered aromatics employed in the flavoring industry are not widely publicized as they are considered more or less as trade secrets. It is our desire to acquaint food chemists and technologists with recent developments in aromatics which have produced new flavor effects and have improved the taste and aroma of the finished food product. The old-time esters and ethers employed in the flavoring industry for the past eighty years have taken a downward trend as a result of the successful search for finer taste and aroma in the manufacture of food products.

Nomenclature Aspects

Some organic preparations used in the flavoring industries are not sold under their true nomenclature, thereby depriving the chemist of the information necessary to formulate his product. It is very important to know the true chemical composition of a product both from the standpoint of compatibility and the need to meet labeling requirements. Quite often information given on aromatic chemicals is misleading. Most of the fine aromatics are sold under trade names and, although chemical and physical data are partially given, the true chemical identity is not often revealed. It should be the aim of organic chemists not only to find new and finer aromatics but also to market them under their proper nomenclature, giving information as to the chemical and physical properties, as well as on the utilization of such aromatics.

The aldehydes. So-called aldehydes such as C-14, C-16, C-18, etc. do not actually represent true products made from their corresponding alcohols or acids. These are misnomers for such chemicals as gamma undeca lactone, methyl phenyl glycidate of ethyl and gamma nonyl lactone. The reason that these facts are mentioned here is that lactones and glycidates will react much more favorably with other components in flavoring products than will aldehydes. If chemists accept the lactones and glycidates as aldehydes, they will have to exercise caution and not use certain materials in their formulations that might lead to polymerization. In other words, they are running the risk of depriving a given compound of an essential aromatic which might be fully compatible with lactones or glycidates.

There is need to beware of some aromatics. Certain of these have been analyzed and found to be *simulated* aromatics under chemical names. Examination of so-called cinnamyl anthranilate, which is supposed to be an anthranillic acid ester of cinnamic alcohol, showed it to be a mixture of methyl anthranilate and other esters. Synthesized cinnamyl anthranilate yields a crystalline material of grapey character and of high fixative value. Cinnamyl anthranilate can be used in many formulations in products like grape, apple, peach, apricot, etc.

Such aromatics as simulated vanilloin (dihydro?) and simulated vanillic ester not made from alcohols and corresponding acids are not to be recommended. They usually are mislabeled as derivatives of protocatechuic aldehyde of which methyl and ethyl products are made; they are known under the names vanillin and ethyl vanillin.

The importance to the flavoring chemist of selecting pure chemical products under true names, with complete data on the physical and chemical properties of the aromatics in question, can scarcely be overemphasized.

It has long been the goal of a great many organic chemists to synthesize not only aromatics found in essential oils but also those found in fruits, vegetables, etc. One of these aromatics is methyl beta methyl thiolpropionate, (7) commonly known as pineapple mercaptan. This aromatic was successfully tried in 0.05% concentration, together with other ingredients used in pineapple flavoring, to the entire satisfaction of flavoring chemists.

Synthetics. In addition to the chemical bodies found in natural products, many modifications in flavor and

°President, F. Ritter & Co. Presented before the annual meeting of the Institute of Food Technologists, Columbus, Ohio, June 13, 1955.

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aroma have been worked out by synthesizing materials not known to be present in natural products. Two such synthetic products, allyl phenoxy acetate and allyl cyclohexane propionate, are now available. Other products that are worthwhile to use in pineapple, apple, and banana blends are ethyl and allyl hexadienoate.

Other synthetics isolated from natural essences and now being used in fruit flavors with good results are shown in Table 1.

Among newly developed aromatics it is important to mention diallyl sulfide and allyl mercaptan. Both products possess the aroma and taste of natural garlic and onion oils. These products are manufactured by our company in their pure state.

Of polyfunctional ketones, which are utilized by many manufacturers to produce such effects as maple, butterscotch, and in some cases strawberry, raspberry, etc., one that merits particular attention is methyl cyclo pentenolone. This very interesting aromatic has a distinct taste of maple and in combination with natural butter flavorings, produces a delicious butterscotch flavor. Methyl cyclo pentenolone, having a ketone and alcohol group, can be esterified with various acids. The acetic, butyric and propionic acid esters have been produced. In this case the OH in the ring was substituted by corresponding acid and very good results were obtained. For example, methyl cyclo pentenolone acetate, butyrate, propionate and valerate can be utilized to produce desirable results in walnut, pistachio, and hazelnut flavorings, while the valerate and propionate can be used in apple and black currant flavors.

Several unsaturated ketones are being utilized in the flavoring industry although the work is yet in the experimental stage. Ketones such as vanillidene and piperonal (acetone), made by aldo condensation reaction, certainly deserve consideration in the flavoring field.

Alpha irone, which is unbelievably good as one of the aromatics for use in raspberry and strawberry flavors, should be studied fully as substitutes for such ketones as methyl, alpha and beta ionones which are used in the production of fruit flavorings. Methoxy phenyl pentenone (d-methyl anisal acetone) is a crystalline product. Minute quantities of this ketone can be used in maple and also in such flavors as currant, raspberry, strawberry and honey. It blends well with methyl cyclo pentenolone on its esters in butterscotch and nut-like flavors. Both are products of good stability.

Last, but not the least interesting of these bodies, is maltol, a crystalline material which can be utilized in the same products as methoxy phenyl pentenone. In making butterscotch, as mentioned before, the addition of concentrated butter flavoring produced from pure butter is noteworthy. These butter derivatives and butter esters are effective enhancers of flavor. The latter have a definite creamy butter taste and aroma.

Many of the synthesized products listed in this paper are worthwhile additions to the group of aromatics used in the flavoring industry. However, they require careful investigation and establishment of compatibility with other aromatics. Such information is available from the producers of such products.

It is necessary on many of the new, as well as the old, aromatics to establish toxicological tolerance in food products. Various trade associations and institutions are constantly working on such data. It is generally accepted in the trade that when aromatics are used in suggested proportions they are not deleterious.

The allergic effect on some individuals using certain of these aromatics merits comment. Many products of extreme strength should certainly be used cautiously and in diluted form. For the convenience of com-

TABLE 1
Some synthetics now in use, the aromatics employed, and typical formula

Natural flavor	*Aromatic isolated*	*Sample formula*	
			%
Raspberry	Beta ionone *(2)*	Beta ionone	10
	Anisic aldehyde *(5)*	iso-butyl acetate	23.49
	Benzaldehyde *(3)*	Anisic aldehyde	1
	Phenyl ethyl alcohol *(3)*	Phenyl ethyl alcohol	3
		Phenyl ethyl iso-butyrate	4
	Hexene *(1)*	Ethyl methyl p-tolyl glycidate	35
	n-hexanol	Phenyl ethyl anthranilate	7
	iso-amyl alcohol *(1)*	Vanillin	3
	iso-butyl alcohol *(1)*	Hexyl butyrate	0.5
		iso-amyl acetate	4
		Ethyl n-butyrate	5
		Rose oil	4
		Diallyl sulfide	0.01
Strawberry	Borneol *(4)*	Ethyl methyl phenyl glycidate	35
	Methyl caproate *(4)*	Amyl aldehyde	0.5
	Amyl aldehyde *(4)*	Bornyl acetate	0.5
	Ethyl Caproate *(4)*	Ethyl caproate	2
		Vanillin	3
		Beta ionone	9
		Ethyl methyl p-tolyl glycidate	12
		iso-butyl acetate	30
		Ethyl butyrate	8
Cherry	Geranyl butyrate *(15)*	Cinnamyl anthranilate	3
	Ethyl caprate *(15)*	iso-amyl acetate	12
	Terpenyl butyrate *(15)*	iso-butyl acetate	12
	Ethyl caproate *(15)*	Cinnamic aldehyde dimethyl acetal	3
	Benzaldehyde *(11)*	Benzyl alcohol	5.5
	Geraniol *(11)*	Geranyl butyrate	2
		Ethyl caprate	4
		Terpenyl butyrate	0.5
		Ethyl caproate	2
		Benzaldehyde	8
		p-tolyl aldehyde	3
		p-methyl benzyl acetate	11
		Ethyl methyl p-tolyl glycidate	16
		Vanillin	7
		Heliotropin	5
Peach	Linalyl esters *(14)* (as valerate,acetate, formate)	Linalyl formate	10
		Gamma undeca lactone	13
		linalyl butyrate	4
	Furfural *(14)*	Heliotropin	14.5
		Geranyl valerate	15
		Furfural	1.5
		alpha-methyl furyl acrolein	6
		Methyl cyclo pentenolone valerate	10
		Benzaldehyde	5
		iso-amyl formate	15
		iso-butyl butyrate	6
Apple	Geraniol *(13)*	Geranyl valerate	10
	Acetaldehyde *(12, 16)*	Geranyl n-butyrate	8
		Geranyl propionate	8
		Linalyl formate	10
		iso-amyl valerate	15
		Vanillin	8
		Allyl caprylate	6
		Geranyl aldehyde (citral)	5
		Acetaldehyde	6.5
		Methyl cyclo pentenolone valerate	8
		alpha methyl furyl acrolein	2
		iso-amyl butyrate	13.5
Coffee	a-furfuryl mercaptan	a-furfuryl mercaptan	10
		ethyl vanillin	3
		solvent	87

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pounders, concentrated solutions of such products may be obtained from manufacturers.

An investigation has been conducted on the dermal irritation properties of some aromatics and essential oils (*10*). Reprints of this report are available.

Furfural acetone and a line of related compounds were tested by the Stanford University Medical School on Erlich Ascites Tumor as a possible tool in cancer research (*6*). Many of the compounds, produced for this purpose, have a pleasant taste and aroma of cinnamon, clove and general spice.

Only the most important of the newly developed aromatics have been discussed here. These products have found universal acceptance in the flavoring industry. Due to the availability of raw materials, great progress has been possible.

TABLE 2
Checklist of newly developed aromatics

Aromatic	Boiling point—°C.	Refractive index	Aromatic character
Allyl anthranilate*	104-106@1	1.5720@24	leafy, winey
Allyl n-butyrate*	80@70	1.4176@15.5	apple and pit
Allyl cinnamate*	105-108@1	1.5661@23	pit flavor
Allyl cyclohexane acetate	66@1	1.4574@20	pineapple, banana
Allyl cyclohexane butyrate	104@1	1.4574@20.5	pineapple, butter
Allyl cyclohexane caproate	128@1.5	1.4620@21	grape, brandy
Allyl cyclohexane propionate	91@1	1.4595@22	pineapple, strawberry
Allyl cyclohexane valerate	119@1	1.4605@22	peach, apricot, apple
Allyl 2-ethylbutyate*	58-60@6	1.4240@15	fruit pit
Allyl furoate*	84-88@6	1.4960@19	sharp mushroom note
Allyl hexadienoate*	67-68@1	1.5066@24	pineapple, anise, melon
Allyl mercaptan*	67-68	1.470	garlic
Allyl pelargonate	87-91@3	1.4332@20.5	pineapple, brandy
Anisyl n-butyrate	110-113@1	1.5020@24	pit and vanilla
Anisyl propionate	100-103@0.5	1.5112@15	pit, quince, vanilla
Cinnamyl anthranilate	m.p. 63-64°		distinctive grape
Cyclohexanethyl acetate*	58-60@0.5	1.4476@21.5	pit, raspberry
Cyclohexyl acetate	61-62@12	1.4390@26	apple, banana
Cyclohexyl n-butyrate	68-71@2	1.4489@17	banana, currant, apple
Cyclohexyl caproate	89-91@2.5	1.4465@17	pineapple, banana, brandy
Cyclohexyl cinnamate	139-143@1	1.5646@15	peach, cherry
Decyl n-butyrate	111-114@2	1.4300@23	brandy, citrus
Diallyl sulfide*	139	1.4877@27	garlic, onion constituent
2-ethylbutyl acetate	55-57@9	1.4100@23	pear, gooseberry
Alpha ethyl furyl acrolein	73-77@0.5		cinnamon, cola
Ethyl hexadienoate*	58-60@2	1.4940@22	pineapple, melon, gooseberry
Ethyl methyl p-tolyl glycidate	121-128@3	1.5085@21	distinct strawberry
Furfuralacetone*	86-88@2	m.p. 37-38°	cinnamon, clove
Alpha furfuryl mercaptan	55-57@17	1.531@25	constituent of coffee
Methyl cyclo pentenolone	m.p. 105-107°		maple, vanilla, butterscotch
3-hydroxy 2-methyl 4-pyrone (maltol)*	m.p.160-163°		strawberry, raspberry, fruit
Alpha irone*	110-112@3	1.4970@20	orris root
Menthadiene-7-carbinol*	98-110@2	1.5047-70@15	lime, spice
Menthadiene-7-carbinyl acetate*	98-111@1	1.4820@22	lime, spice
Methoxy phenyl pentenone (alpha methyl anisal acetone)*	m.p. 60-62°		butter, butterscotch, cherry
Alpha methyl furyl acrolein*	85-90@1.5		cinnamon, cola, clove, mace
Methyl beta methyl thiolpropionate*	77-83@14	1.4656@18	occurs naturally in pineapple
Methyl furoate*	81-82@20		mushroom, meaty
Gamma octalactone	83-86@1	1.4610@15	cocoanut, peach
Piperonal acetone	m.p. 109-110°		heliotrope, vanilla, cherry
Gamma stearolactone	m.p. 47°		cocoanut, cheese, butter
Iso-valerophenone*	77-79@1	1.5147@15.5	nut, spice
Vanillidene acetone	m.p. 128-129°		vanilla, butterscotch

*The asterisk indicates that the substance is used less than 1 part per million in finished product. All others are used more than 1 but less than 25 parts per million in finished food.

Important New Aromatics

Physical and chemical constants of the products listed below (Table 2) were determined in our laboratories. Comments on the organoleptic and olfactory characteristics and recommended dosage to be used in finished products were also derived from the experience of our laboratories.

Conclusion

Selecting aromatics to be incorporated in the formulation of a flavor is a matter of personal experience and taste. All we have attempted to do here is to give general guidance for the utilization of newer aromatics. Following the formulae, or any other information given to the compounder, does not always produce satisfactory results. The chemist working with aromatics must be well qualified. Olfactory and organoleptic training is essential and this can be attained only by experience.

Knowing the facts about aromatics helps a great deal in creating new formulae. There is a great deal of similarity between taste, aroma, odor—and even music. In compounding flavorings, musical theory could be applied. Proper compounding produces harmony; improper compounding will produce a discord; in short, "sharps" and "flats" can be observed in compounding flavors as well as in composing music. Qualitatively, some of the sharp notes in compounding flavors can be attributed to such aromatics as highly volatile esters, aldehydes, mercaptans, and low carbon organic acids.

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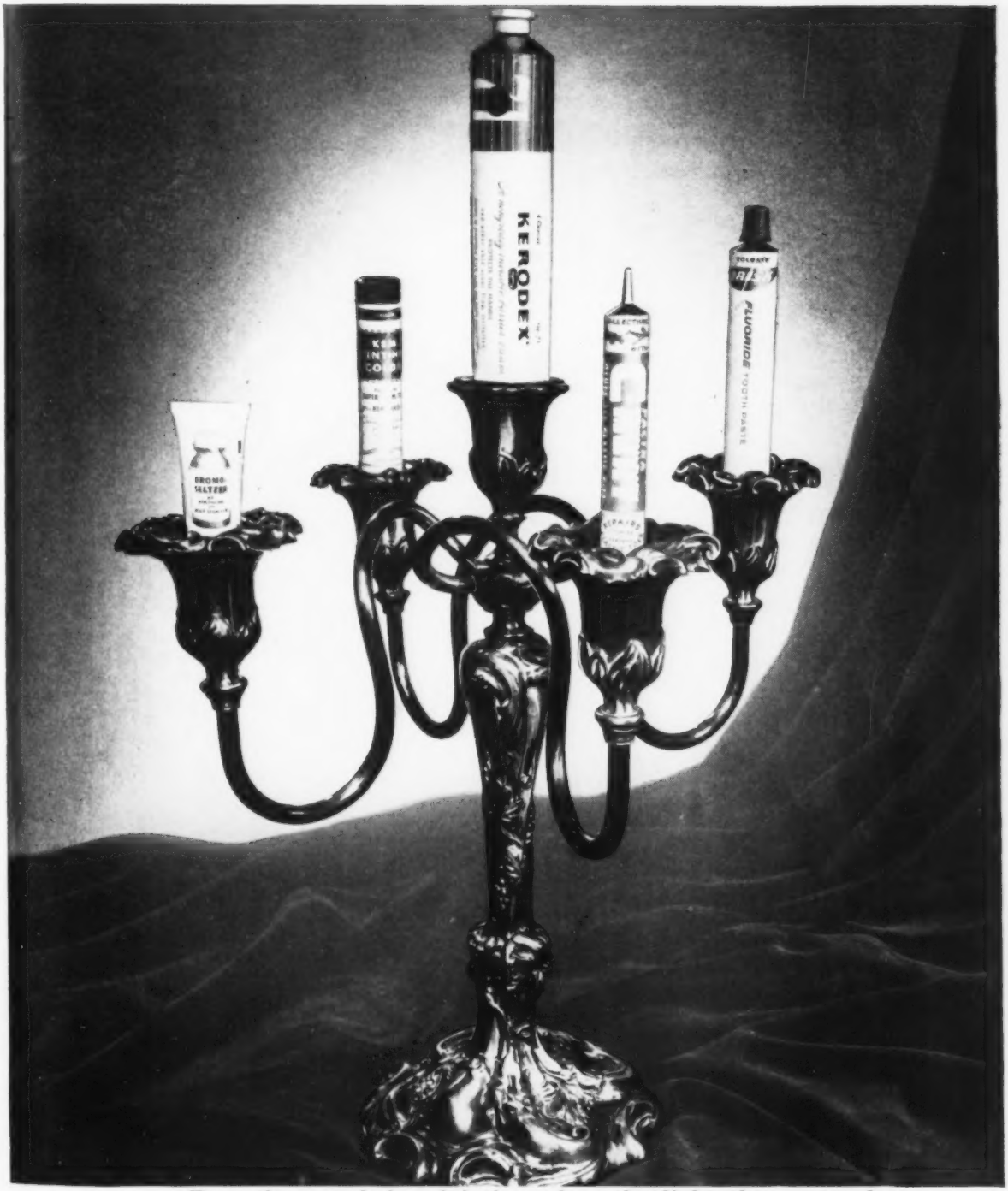

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New PRODUCTS & IDEAS

DISSOLVER—1

Morehouse-Cowles, Inc. has announced the development of an improved laboratory model of the Cowles Dissolver, which features a continuously variable range of speeds from 1900 rpm to 5900 rpm with impeller speeds of 1600 to 6150 fpm depending upon the size impeller used. Improvements claimed for the model are: greater handling speed and convenience made possible by a simple speed adjustment knob which eliminates cover removal, belt changes, and sheave change; a speed indicator plate to provide for approximate rpm settings; a heavy duty drive and belt which can pull full load capacity of the motor without slippage or power loss. The model has a minimum height of 21 15/16 inches, with a 10 inch width and 28 7/8 inch height. It is designed for use with two-gallon containers.

COULOMATIC TITRIMETER—2

The Coulomatic Titrimeter, an instrument manufactured by the Fisher Scientific Co., is equipped to perform a number of difficult analyses, such as determinations of mercaptans in petroleum products, halides in trace quantities, and many other chemicals in various compounds. Its principal is based on the measurement of electricity needed to perform an operation, and calculation of ratios to determine composition. The machine is claimed to hold the current constant and to record the titration time to the nearest 0.1 second. The instrument is designed to be used with the company's standard Titrimeter control box. A variety of electrodes is offered.

PLASTIC VIALS—3

Lermer Plastics, Inc. announces the development and availability of a line of plastic vials. Called Lermer Plastic Coupl-Vials, they are supplied in threaded cap and body sections and are joined by an aluminum coupling in order to facilitate the packaging of long or difficult-to-package products. By inserting a separator in the center of the aluminum coupling, the vials can be used to package two different or related products. The two sections can be supplied in various combinations of sizes to suit different packaging requirements. They are available in colors, either clear or opaque, and can be printed.

ADHESIVES FOR PLASTICS

Paisley Products, Inc. has developed a series of "Pliastic" adhesives based on synthetic resins, latices, lacquers and other organics to bond plastic surfaces such as those of polyethylene squeeze bottles and polyester (Mylar) film wraps. Uses are for forming the packages themselves and for labeling. Most versatile of the nine in the series is Pliastic-241, which is recommended for surface treated polyethylene, Mylar and heavily waxed glassines. Pliastic-1707 is formulated for adhering paper labels to such surfaces as lacquered, varnished, printed or metal containers, plastic bottles or closures, and plated metals.

CORROSION RESISTANT PUMPS

Milton Roy Co. is now equipping its pumps and chemical feed systems with a plastic material which makes the liquid ends corrosion resistant. Called Plio-Tuf, the material, which is manufactured by the Goodyear Tire & Rubber Co., is used by Milton Roy at places where a chemical being pumped would corrode. It is a resin compound and inert to many chemicals which cannot be handled by alloys. Milton Roy says the new liquid ends are relatively inexpensive because Plio-Tuf can be molded and does not have to be extensively machined. It can be used on pumps with plunger diameters up through 1 1/8 inches. The recommended ranges of use of the new liquid ends are: pressure, 150 psi; capacity, 70 gph; and temperature, 160°F.

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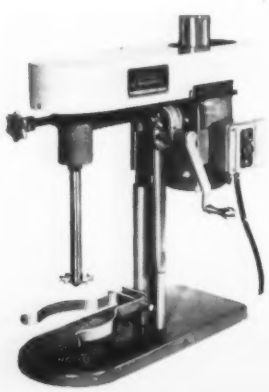

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News and Events

SCC Reveals Plans for Third Cosmetic Seminar

The Society of Cosmetic Chemists has announced plans for its third cosmetic seminar to be held on October 4-5. Three half-day symposiums will be presented, each one consisting of two to four papers on topics of current interest to the cosmetic industry. Outstanding authorities have been engaged as lecturers and moderators, in addition to a number of guests in each field to participate in the discussion.

The three topics to be presented include: 1. Biochemistry of Epidermal Keratinization. 2. Theory and Application of Viscosity in Cosmetics. 3. Modern Emulsification Techniques.

Presentation of the nine papers will be at the Barbizon-Plaza Hotel, 101 West 58th St. and the two luncheons, dinner, and cocktail party will be at the New York Academy of Sciences, 2 East 63rd St.

Several major cosmetic companies have graciously invited those in attendance at the seminar to visit their plants on Friday afternoon. A choice of one of four companies is included in the plant trip, and bus transportation will be provided at an extra nominal charge to and from New York.

The cost of this cosmetic seminar has been set at $20 for members of the Society of Cosmetic Chemists, and $25 for non-members, which includes the two-day program, two lunches, cocktails and dinner on Thursday evening. The attendance will be limited to 250 people and reservations will be made upon receipt of check or money-order (payable to the Society of Cosmetic Chemists, 2 East 63rd St., N.Y.C.), and will be taken in order received.

ADACIOM Addressed by Food and Drug Official

The Associated Drug and Chemical Industries of Missouri (ADACIOM) began its regular monthly meetings for the year on September 12 with Roy S. Pruitt, Chief, St. Louis District of Department of Health, Education and Welfare, Food and Drug Administration, as speaker. His subject was "50 Years of Progress in Pure Food and Drug Legislation."

Mr. Pruitt has been assigned to various positions in the field organization of the Food and Drug Administration, having been stationed in Cincinnati and New Orleans, as well as St. Louis. He has operated both as a chemist in the laboratory of the Food and Drug Administration as well as an inspector for the same organization. He spent one year in Washington as an assistant to the Commissioner of the Food and Drug Administration, dealing specifically with cosmetics. For the past 15 years he has occupied the position of Chief of the Field District, having been stationed 2 years in Cincinnati and the last 13 years in St. Louis.

Controllers Institute Elects Directors of Local Controls

Four executives in the toiletries field have been elected directors of local controls of the Controllers Institute of America: Robert J. McGinley, The Procter & Gamble Co., Cincinnati Control; Ralph W. Sauber, Rayette, Inc., Twin Cities Control; William C. Watson, Chesebrough-Pond's Inc., New York Control; and Robert B. Wright, The Mennen Co., Newark Control.

Established in 1931, the Institute is a non-profit management organization of controllers and finance officers from all lines of business. The total membership exceeds 4,500.

Albert Verley Executives Make Trans-Atlantic Trips

Edouard Baumann, an Albert Verley & Co. sales representative, recently returned from an extensive and successful trip to France, during which time he visited various French perfume houses, accompanied by Victor Robert, general manager of Verley's wholly-owned affiliate, Aromescence, Inc., Paris. He visited in particular those companies having branches here in the United States, as well as a number of the leading French couturiers, with the object of launching a series of Parfums de la Maison. The company reports that Mr. Baumann succeeded in laying the foundation for interesting sales in France for Albert Verley & Co. through the efforts of Aromescence, Inc.

As a result of Mr. Baumann's trip, Mr. Robert decided to pay a return visit to Albert Verley & Co., and did so during the week of July 30. This was Mr. Robert's first trip to New York since April of 1953 and it was also his first opportunity to inspect the new Verley offices and plant at Linden, N. J.

The primary purpose of Mr. Robert's visit was to brush up on Verley's new techniques and equipment for compounding, and a special inspection of Verley's newly established essential oil department, as well as a complete tour of Verley Chemical Co. in Newark. A discussion of potential sales in France with E. J. Strobl, president of the company, absorbed a great deal of Mr. Robert's time.

CIBS ADDRESSED BY TELEVISION CELEBRITY

Jack Lescoulie, center, of NBC's Dave Garroway "Today" show, is greeted by David J. Warner, left, of Fleuroma, president of the Cosmetic Industry Buyers & Suppliers Assn. Mr. Lescoulie, who is also announcer on the Jackie Gleason show, was guest speaker at the CIBS August luncheon meeting, held at Toots Shor's restaurant in New York. CIBS is an organization of the younger men in the cosmetic industry. Also greeting Mr. Lescoulie is Alfred Mossheim, of the House of Tre Jur, program chairman of CIBS.

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The judges of the Shulton, Inc. Old Spice Father's Day Window contest were snapped making their selection of winners from among the thousands of entries. From left to right are Frazer Sinclair, George Klinger and Lester Gaba. Kibitzing are Miss Maxine Rowland, Shulton's advertising manager; and Frank N. Carpenter, a Shulton v-p. The prizes totaled $6,075.

Philadelphia Cosmetic Assn. Sponsors 15th Annual Show

The Philadelphia Cosmetic Assn. sponsored the 15th Annual Philadelphia Cosmetic Show at the Benjamin Franklin Hotel in Philadelphia August 26-30. The participating members and their representatives were:

Angelique & Co., Inc., John R. Bland; Astorloid Mfg. Co., Keith S. Grossman; Parfums Blanchard, Harry D. Leibowitz; Balm Argenta, Ruth Fox; Bal de Tete, Ruth Fox; Hazel Bishop, David Margolis, Charles Arnold and Harris Sobol; Bourjois, Inc., Les C. Hallett; John H. Breck, Inc., Chester H. Tosh and Robert Motz; Caron Corp., George C. Lyon; Celebrity, Inc., B. Fierstein; Parfums Charbert, Inc., Max D. Tropp, Doris Brad, and Maxim S. Wise; Charmeuse Creations, Albert R. Rhode; Ciro, David S. Easterbrooks and Jack Rush; Daggett & Ramsdell, Inc., Joseph P. Ryan and Pat Carney; Dana Perfumes, Inc., Leon I. Stein and Jon E. Stein; Delagar Products, Leon & Jon Stein & Co.; The DeVilbiss Co., Harry D. Barr; D'Orsay Perfumes, Leo R. Kass and Bernard Aronson; Dorset-Rex Compacts, Richard S. Wolff; Elmo, Inc., J. Ernest Redmile and Carolyn M. Redmile; Empire Brush, Inc., Henry L. Haizen; Ever-Dry Corp., J. Ernest Redmile and Carolyn M. Redmile; Evans Atomizers, Inc., Harry Leibowitz; Parfums Evyan, Inc., James A. McElligott.

Faberge, Frederick W. Steinman and Peter Maero; Barbara Gould, Inc., Les Hallett; Dorothy Gray, Ltd., Wm. Tice and John J. McCormack; Gibson-Thompson Co., Inc., Jack Huber, Anton Ast and Chas. Goldberg; Harriet Hubbard Ayer, Robert Shenkman; Hewitt Soap Co., Inc., Edw. A. Burkholder; Holmes Spray Atomizers, Hurst U. Eckels; Houbigant Sales Corp., Harmon A. Spector, P. Jay Julicher and J. McCarthy; House of Men, Joseph Lopen; "His"—Toiletries for Men, Joseph Lopen; Richard Hudnut Sales Co., David S. Easterbrooks and Jack Rush; Jules Montenier, Inc., Kings Men, Wm. C. Bailey; Judson Mfg. Co., S. Keith Grossman; The Kurlash Co., Inc., Harry R. Barr and Paul V. Barr; Kensington Soap, Edw. A. Burkholder; Krystal Bath Stix, Albert R. Rhode; LaCross-Schnefel Bros. Corp., Albert Biener; Lanvin Parfums, Inc., Alex Green; Lanolin Plus, Inc., Leon & Jon Stein & Co.; Lentheric, Inc., Robert W. Kline, Michael Luttrell and Arthur Sturgis; Lexicon Products, Alex Fine; Lightfoot Schultz Co., Frank Heineman; Lucien LeLong, James Crowley; Loctopine-Swiss Pine Importing Co., Harry Leibowitz; Manon Freres, Harry R. Barr and Paul V. Barr; Marie Earle, James Crowley; Countess Maritza Cosmetic Co., Gabe Poletti; Marton Freres, Inc., Herman Goldner and Al Sklar; Matson Mfg. Co., Irving Applebaum; Mem Co., Inc., Herman Goldner and Al Sklar; Menda Co., Harry Barr and Paul Barr; Metaltex, Inc., Pat Carney; Milkmaid, Inc., Robert Shenkman; Mohawk Brush Co., James H. Monroe; Monico, Inc., Les Hallett.

Jean Nate, Inc., Alexander A. Koswick; Nina Ricci, Max D. Tropp, Doris Brad and Maxim S. Wise; Ogilvie Sisters, Harry R. Barr and Paul V. Barr; Omnibus Soap, Edw. A. Burkholder; Philadelphia Cosmetic Assn., Milton Rubin; Primrose House, Inc., Joseph P. Ryan; Mary Sherman, J. Ernest Redmile and Carolyn M. Redmile; Leon & Jon Stein & Co., Robert J. Levy, Adolph Gutlohn and Jerry Unger; Stuart, Inc., Alex Fine; Swissco Music Box, Irving Applebaum; Tek-Hughes-Hair Brushes, Robert Cruickshank and Dave Burge; Tom Fields, Ltd. (Tinkerbell), Harry Leibowitz; House of Tre-Jur, Inc., J. Ernest Redmile and Carolyn M. Redmile; Tussy Cosmetiques, Arthur G. Roberts and Edward J. List; Victoria Vogue, Irving Applebaum; Williams Brush Co., Albert R. Rhode.

Prince Matchabelli, Inc., Robert Swainson and Robert A. Maurer; Prophy-lac-tic Brush Co., Harry C. Thorpe; Rosal Limited (Shai), Fred E. Lewis; Royal Sweden Brushes, Hurst U. Eckels; Roger & Gallet, Wm. H. Merner, Jr.; Helena Rubinstein, G. B. Brodie, Jean Rodin and Netta Sturz; Seaforth (A. D. McKelvy), R. A. Swainson and R. A. Maurer; Skan Laboratories, Harry Barr; Stephen Riley Co., Leon & Jon Stein & Co.; Shulton, Inc., J. T. Wilson; Simmons Kit Co., Harry R. Barr; A. R. Winarick, Inc., Walter Diamond and Wm. Diamond; Allen B. Wrisley Co., Ralph Montgomery and J. Manning; Yardley of London, Inc., Wm. J. Showaker and Albert J. Robertson.

Maison G. deNavarre Leaves for Europe on October 5

Maison G. deNavarre, founder of the Society of Cosmetic Chemists who is well known throughout the world for his literary contributions and his scientific services to the cosmetic industry, will leave for London on October 5, immediately after the third cosmetic seminar in New York. He expects to spend about a week in London and after that will go to Paris for about five days. Following this he will spend about a month traveling in Europe, where he will visit places of interest and meet some of his many friends on the continent.

Chicago Chapter SCC Hears Talk on Cream Shampoos

The September 11 meeting of the Chicago Chapter of the Society of Cosmetic Chemists was addressed by R. L. Patterson, head of the Industrial Research department of the Procter & Gamble Co. He spoke on "Cream Shampoos—Some Factors Affecting Their Consistency."

R. L. Patterson

Mr. Patterson has been associated with Procter & Gamble since 1945. At that time he joined their Research and Development department, and has since concentrated on research on inedible soap and synthetic detergent products for both the household market and the industrial field. Mr. Patterson is a graduate of the University of Kentucky.

SPOTLIGHT News...

Coca Cola Export Corp. is marketing a fruit flavored drink in Australia and Italy. It is a non-cola drink and comes in orange and lemon flavors. The beverage is called Fanta and is being sold in Brisbane and Perth, Australia and in Naples, Italy. The company plans to extend sales to other foreign countries but is undecided as to whether to introduce it into the United States. This is the first departure from its standard Coca Cola drink since the company was founded.

Sixteen tons of money are to be given away by Procter & Gamble Co. in the promotion of its new pink Dreft detergent. The winner will be the one who writes the fourth line to a jingle that will be advertised in September magazines. Sixteen tons of money scales in at $46,400. The company states that that is what 16 tons of pennies are worth. There will be sixteen tons of second prizes—automobiles. That scales down to ten Ford Fairline sedans.

Manhattan Soap Co., New York and The Purex Corp., South Gate, California have merged their operations. Purex Corp. acquired all Manhattan stock. Purex makes Old Dutch Cleanser and a deodorant bar soap and Manhattan makes the Sweetheart line of toilet soaps. Fairbanks Soap Co. of Toronto a subsidiary will continue under its present management but will coordinate its work with Purex Corp. Ltd. of Toronto.

Two deodorant soaps are being tested by Colgate-Palmolive Co.—Palmolive soap fortified with bithionol and a deodorant beauty soap.

Eight states have now virtually rendered fair trade inoperative. John Schwegmann supermarket operator won his case in the Louisiana Supreme Court. The court ruled that the non-signer clause constitutes an unlawful delegation of power to manufacturers because it enables them to hold retailers to a contract even though they may not have signed it. Another session of the Louisiana legislature will not be held until 1958 so there is little chance of nullifying the decision by new legislation. The states in which the highest courts have ruled out either the non-signer clause or the entire fair trade law are: Arkansas, Florida, Georgia, Michigan, Nebraska, Oregon and Virginia. In 15 other states the constitutionality of their fair trade laws including the non-signer clause has been upheld. They are California, Connecticut, Delaware, Illinois, Iowa, Massachusetts, Maryland, Mississippi, New Jersey, New York, North Carolina, Pennsylvania, South Dakota, Tennessee and Wisconsin.

Americans eat nearly ten million pounds of cinnamon each year according to the American Spice Trade Assn. It leads in popularity by a wide margin six commonly used baking spices: nutmeg, ginger, cloves, alspice, poppy and caraway seeds.

Lanolin Plus Inc. will sponsor a $250,000 giveaway TV promotion starting October 9. It will be a version of "Break the Bank" which will be the largest giveaway yet with the possible top prize of $250,000.

The Pharmaceutical Division of Max Factor & Co. has been broadened to include the handling of specialty products in addition to pharmaceuticals. All outstanding shares of Lee Ltd., owner of the trademarks Sof-Set, Sof-Set-No Lac, and Dri-Mist, the latter a deodorant, have been purchased by Max Factor & Co. Previously Lee Ltd., of which John Roosevelt, son of the late president Franklin D. Roosevelt, was president, and a subsidiary of Max Factor & Co. had been in partnership for the distribution of Sof-Set and Dri-Mist. These products will be made and sold by the new Pharmaceutical Division of Max Factor & Co. in future. Alfred Firestein is manager of the new division.

Sales of Dow Chemical Co. topped the half billion dollar mark in the fiscal year ended May 31, 1956. Total income was $569,500,000 up from $478,800,000 the previous year.

Net sales of Max Factor & Co. for the first half of 1956 were $15,109,680 up 9% from the total for the corresponding period a year ago.

Tinkerbell Toiletries has moved to new quarters in 166 Coolidge Ave., Englewood, N. J. The company makes toiletries for children.

A pencil with a built in coffee break for the use of salesmen, giveaways at trade shows and direct mail enclosures is announced by Franklin C. Wertheim. It consists of a regular lead pencil for the first half of its length. The upper half consists of a hollow plastic tube filled with instant coffee for one cup. Removing the eraser enables the coffee to be shaken into the cup to which hot water is added.

The title of Countess has been conferred on Mrs. Helen Neushaefer, president of the cosmetic manufacturing company that bears her name by the government of San Marino, one of Europe's oldest republics. The title in the native language is "Contessa." Mrs. Neushaefer, who was named one of the ten best dressed American women, may purchase a site for a castle when she visits San Marino in the near future.

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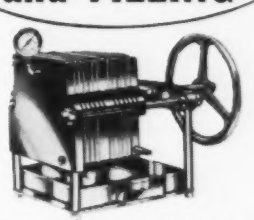

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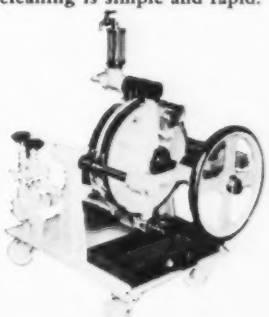

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RAYMOND LABORATORIES, INC. APPOINTS SALES MANAGER

J. J. (Jerry) Mikschl (left) has been appointed sales manager of Raymond Laboratories, Inc., St. Paul, Minn., chemical manufacturer. He will head up Raymond's commercial chemical sales sold nationally through representatives of the M. H. Baker Co. J. C. Zemlin (right), acting sales manager, will remain as director of manufacturing research in Raymond's research and development.

Prize for Best Paper in Packaging Courses at UCLA

The California Packaging Club is offering a prize of $250 for the best paper written by an enrollee in any one of three classes offered this fall by the University of California Extension. They are Industrial Packaging Design, Packaging for Shock and Vibration Protection, and Creative Packaging of Consumer Goods. The latter will be instructed by Philip Libson, purchasing agent for Max Factor & Co.

Dr. Herman Goodman To Tour Latin America

Dr. Herman Goodman, author of "Cosmetic Dermatology" and other works on cosmetics, will leave for an extended lecture tour through Latin American countries next month. On his return he plans a similar trip to Stockholm, Sweden.

Rheology Review Scheduled for New York S. C. C. October 24

The featured speaker at the October 24 meeting of the New York Chapter of the Society of Cosmetic Chemists will be A. L. Scarbrough of the National Lead Co.

Mr. Scarbrough will present a "Rheology Review for Cosmetic Chemists." It will cover flow characteristics of representative gels and pigmented dispersions under three headings: basic families, pigment dispersions, and emulsions; and measurement of flow of non-Newtonian liquids including a discussion of instruments for measurements and factors to account for in the use of the instruments; and theories of flow in non-Newtonian liquids.

The lecture will be sufficiently neutral in theory and practical aspects to interest everyone. Mr. Scarbrough has been associated with the new products development department of the National Lead Co. for eight years. He took his degree of Master of Science from Lehigh University. Most of his investigation career has been spent in the fields of pigments, gelling agents and stabilizers.

Use of Toiletries by Teen-Agers is Surveyed

A total of 86.4% of junior high school girls and 97.5% of senior high school girls use lipstick, according to the Youth Market Consumer Survey conducted for *Scholastic Magazines* by the Institute of Student Opinion.

The survey, conducted with the aid of faculty advisors and staffs of high school newspapers, covers a total of 4,262 students (ages 12 to 18) in 24 schools throughout the country.

The poll found that 60.2% of the junior high school girls use a home permanent as compared with 56.7% of the senior high school girls. A more marked difference in fragrance use was reported, with 85.6% of the junior high school girls stating they use a fragrance as compared with 65.7% of the senior high school girls.

Of the junior high school boys polled, 53.7% reported they use a hair dressing as compared with 61.2% of the senior high school boys. An electric shaver is used by 12.7% of the younger boys, compared with 39.2% of the older boys. Comparative figures reported for the use of a safety razor are 16.7% in junior high and 46% in senior high, and for the use of shaving lotion, 16.1% and 41.3% respectively.

Far more girls reported that they used a deodorant than did boys, with the younger girls reporting 95% and the older girls 89.7%, as compared with the younger boys' 21% and the older boys' 36.7%.

Mary Chess Executives On European Tour

Mrs. Avery Robinson, founder of Mary Chess, Inc.; her daughter, Mrs. Carley Dawson; and Mrs. Francis Hollis, executive vice-president of Mary Chess, flew to Portugal in August. The party spent two weeks in that country before continuing through Spain.

Mrs. Hollis will visit Paris and London before her return this month. Mrs. Dawson will stop over in London before the trip back in October.

Mrs. Robinson is to visit her other daughter, Mrs. Francis Howard, in her new home outside Nice before the return journey to New York at the end of September.

Owens-Illinois Promotes Three Key Executives

Promotions for three key executives on the production staff of the Glass Container Division of Owens-Illinois Glass Co. have been revealed. The announcement followed the appointment of C. G. Bensinger as division president, a new position in which he will supervise the company's glass container and closure operations in the United States.

Richard A. Cosh, vice president of Owens-Illinois and general factories manager of the Glass Container Division, has been named assistant general manager of the division and a member of the Owens-Illinois Planning and Executive Research Committees.

Miles G. Beishline, division vice president and production manager, will succeed him as division factories manager and Eliot Marr, manager of the Los Angeles glass container plant, will transfer to Toledo as division vice president and production manager, succeeding Mr. Beishline. Messrs. Beishline and Marr will also serve on the division's Research and Directing Committees.

Maurice Couderchet Back from France Reports on Crops

Maurice Couderchet, president of Charabot & Co. Inc. has returned from a two months' trip to Europe, when he spent much time visiting his principals, Charabot & Cie. in Grasse, France. He reports that there is a pitiful evidence of the damage done by the cold spell last winter. Some bitter orange trees are intact in a few places, but most of them are just dead wood. On the other hand, the rose crop was abundant and prices are somewhat lower. Processing Jasmin was late this year and only started on August 6. Slightly higher prices are being paid for the flowers.

While the lavandin crop will be plentiful—probably in the neighborhood of 400 tons—lavender will be in short supply; about 25 to 30% less than last year. Yet there is a world wide demand for lavender, as this odor seems to be increasingly popular. Mr. Couderchet reports that the capital of Charabot & Cie. was recently increased to 200 million francs.

Pack-It Celebrates Eighth Anniversary with New Quarters

Pack-It, a Newark, N. J. concern headed by William T. Ropp, which specializes in contract packaging and private label formulation, is celebrating its eighth anniversary this month by moving to larger quarters. The new plant is located at 222 Pacific St.

Aromatics Products, Inc. Announces Jasmin Substitute

Aromatic Products, Inc. has announced that their perfumer-chemists have developed an accurate reproduction of natural absolute jasmin which is said to possess a more enduring odor than the natural product. Called Absosynth Jasmin, it may be used as a substitute either completely or in part. The manufacturer reports that in addition to its high quality, it is also less expensive than natural jasmin.

Pharmaceutical Assn. Delegates to Meet

The house of delegates of the American Pharmaceutical Assn. will hold an interim meeting in Washington, D. C., November 10-11.

APhA's 1957 annual convention will take place April 28 to May 3 at the Statler Hotel in New York.

NEW LABORATORY FOR GIVAUDAN FACILITIES IN GENEVA

Messrs. Givaudan have just refitted their microanalytical laboratory in Geneva, Switzerland. The new air conditioned laboratory is fitted with several of the most up-to-date semiautomatic sets for elemental analysis. The functional microanalysis (for the evaluation of alcohols, esters, lactones, aldehydes, ketones, etc.) which will permit the analysis of essential oils with a sample of as little as a few centigrams is now being realized. This installation, which provides the latest means of analytical distillation, of liquid or vapor chromatography (to which will soon be added the use of isotopes or radioactive tracers) forms research facilities of which the whole perfume industry may be proud, as it is representative of a healthy outlook.

This installation was preceded by the inauguration of a laboratory for infrared and ultraviolet as well as microwave spectrometries in the Givaudan plant at Vernier.

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AEROSOL NEWS

Aerosol Committee To Hold Meeting

The Aerosol Administrative Committee of the Chemical Specialty Manufacturers Association will meet September 24-26 at the Oyster Harbors Club, Osterville, Mass. when the board of governors of the association holds its meeting, there.

Information on 1956 Aerosol Awards Competition

Entries for the 1956 Aerosol Awards Competition sponsored by the Chemical Specialty Manufacturers Assn. close October 15. A product to be entered must have been freely offered for sale prior to September 1. The awards will be made at the December 3-5 meeting of the Association in the Mayflower Hotel, Washington, D. C. Practically every possible aerosol type is included. Those of most interest to the cosmetic and its allied industries are: Room deodorants, household products, shaving products, hair preparations and other personal products such as body deodorants, shampoos, drugs, etc. Frederick G. Lodes is chairman of the awards committee. Entries should be sent in as soon as possible. Forms for the application of an entry are obtainable from the Aerosol Awards Committee of the Chemical Specialty Manufacturers Assn., 50 E. 41 St., New York 17, N. Y. The entry should comprise one completely assembled empty container and a completed entry blank.

Aerosol Seminar Featured At Packaging Institute

An aerosol seminar was a feature of the 18th annual forum of the Packaging Institute in the Hotel Statler, Cleveland, September 11. The theme was "Aerosols —Next Stop the Pharmaceutical Industry." The moderator was Richard J. Hennessy. Two papers were presented: "Aerosols—Principles and Scope of Operation" T. D. Johnson; and "Pharmaceutical Aerosols from Idea to Product," Morris Root.

Propose Changes in Regulations On Shipment of Aerosols

Changes in the regulations of the Interstate Commerce Commission on the safe shipment of aerosol products which are contemplated were distributed by the Chemical Specialty Manufacturers Assn. last month and a special meeting was held September 13 to consider the changes proposed. Sec. 9 is of particular interest to the cosmetic industry. The proposed regulation suggested by the Bureau of Explosives reads: "In inside non-refillable coated glass or metal container of not more than 8 fluid ounces capacity charged with a non poisonous drug, medicine, cosmetic or soap and gas to a pressure not exceeding 85 lb. absolute pressure at 70 deg. F. or 150 lbs. absolute pressure at 130 deg. F. and capable of withstanding without rupture or leakage one and one half times the pressure at 130 deg. F. (73.302 a-9)

Givaudanian Reports on New Suspension Agent

Deltyl Extra, a suspension agent for powder aerosols manufactured by Givaudan-Delawanna, Inc., was recommended in *The Givaudanian* recently for its compatibility with basic cosmetic ingredients. The material was said to be usable in low concentrations and to have exceptional solvent properties.

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SCC Issues Revised Program for 3rd Cosmetic Seminar

The Society of Cosmetic Chemists has issued the final program for the third annual cosmetic seminar, to be held at the Barbizon-Plaza Hotel, New York City, on October 4-5.

9:00 a.m., October 4—Biochemistry of Epidermal Keratinization:

1. "Biochemical Data on Physiologic and Pathologic Epidermal Keratinization," by Peter Flesch, University of Pennsylvania, Department of Dermatology, Philadelphia, Pa.

2. "Physiology and Pathology of Epidermal Keratinization," by Stephen Rothman, University of Chicago, School of Medicine, Chicago, Ill.

3. "Morphology of the Epidermis as Shown by the Electron Microscope," Cecily Cannan Selby, Cornell University Medical College, New York, N. Y.

4. "A New Method for Measuring the Hardness of Keratin," Samuel M. Peck, Columbia University; and Arthur Glick, Mount Sinai Hospital, New York, N. Y.

Round table discussion by Franz Herrmann and Rudolf L. Baer, both of the Department of Dermatology, New York University—Bellevue Medical Center, New York, N. Y.; Earl O. Butcher, Department of Anatomy, College of Dentistry, New York University, New York, N. Y.; and Irvin H. Blank, Massachusetts General Hospital, Boston, Mass.

Moderator of the section will be Marion B. Sulzberger, Department of Dermatology, New York University—Bellevue Medical Center, New York, N. Y.

12:45-1:45 p.m., luncheon, New York Academy of Sciences Building.

2:00 p.m.—Theory and Application of Viscosity in Cosmetics:

1. "Capillary Methods of Flow Measurement," Alden B. Bestul, National Bureau of Standards, Washington, D. C.

2. "Rotational Methods of Flow Measurement," Walter K. Asbeck, Carbide & Carbon Chemicals Co., South Charleston, W. Va.

3. "Ultrasonic Method of Flow Measurement," Wilfred Roth, Roth Laboratory for Physical Research, Hartford, Conn.

4. "Interpretations and Applications of Flow Measurement," Ruth N. Weltmann, National Advisory Committee for Aeronautics, Lewis Flight Propulsion Laboratory, Cleveland Airport, Ohio.

Discussion by George J. Rosenblit, Bendix Aviation Corp., Cincinnati, Ohio; Frank D. Dexter, Bakelite Co., Bound Brook, N. J.; Romuald Bulas, Interchemical Corp., New York, N. Y.; and S. V. Lieberman, Bristol-Myers Products Division, Hillside, N. J.

Moderator will be Frederick A. Eirich, Polytechnic Institute of Brooklyn, Brooklyn, N. Y.

5:45 p.m., cocktails; 6:15 p.m., dinner, New York Academy of Sciences Building.

9:00 a.m., October 5—Modern Emulsification Techniques:

1. "Continuous Processing of Cosmetic Products in Votator Apparatus," John P. Bolanowski, The Girdler Co., Votator Division, Louisville, Ky.

2. "Ultrasonic Emulsification: Theory, Applications, and Limitations," Wilfred Roth, Roth Laboratory for Physical Research, Hartford, Conn.

Discussion by Donald M. Skauen, University of Connecticut, School of Pharmacy, Storrs, Conn.; and S. J. Strianse, Shulton, Inc., Clifton, N. J.

Moderator will be S. D. Gershon, Lever Brothers Co., Research and Development Division, Edgewater, N. J.

12:15 p.m., luncheon, New York Academy of Sciences Building.

Plant trips to the Mennen Co., Morristown, N. J.; Shulton, Inc., Clifton, N. J.; Bristol-Myers Co., Hillside, N. J.; and Helena Rubinstein, Inc., Roslyn, Long Island.

LUIS DE HOYOS SPEAKS AT FOREIGN POLICY CONFERENCE

Luis de Hoyos, vice-president and treasurer of Synfleur Scientific Laboratories, Inc., Monticello manufacturer of basic perfume and flavoring materials, participated as a panel speaker at the eighth annual conference on American Foreign Policy held recently at Colgate University in Hamilton, New York. Mr. de Hoyos was invited as a representative of business to act on the panel dealing with problems of American Foreign Policy in Latin America, where Mr. de Hoyos travels extensively and has numerous business affiliations.

Among the featured speakers and honored guests at the conference were the Ambassadors from Colombia, Greece, Iraq, China, Ceylon, New Zealand, as well as Jacob Javits, Attorney General of The State of New York; Thomas Finletter, ex-Secretary of the Air Force, and Dr. Jose A. Mora, Secretary—General, Organization of American States, and other distinguished visitors.

Above the Latin American panel is seen in session. From left to right are: Joseph M. Marrone, director, Foreign Trade Zones Board, Dept. of Commerce; Hon. Paul C. Daniels, former U. S. Ambassador to Ecuador and Honduras; Dr. Arthur P. Whitaker, Professor of Latin American History, University of Pennsylvania, Chairman; Luis de Hoyos, vice president and treasurer Synfleur Scientific Laboratories; Milton Bracker, Latin American specialist, New York Times.

Germaine Monteil Presents Super-Royal Cream

Germaine Monteil has introduced this this month her new product, Super-Royal Cream. Based on 100 milligrams of royal jelly per ounce, the cream is composed of a combination of skin conditioners and moisturizing agents. It comes in an ivory fluted jar with gold metal label, presented in a gold metal foil platform box. The prices are $10 for one ounce, $18 for two ounces, and $30 for four ounces.

Ungerer & Co. Has New Chicago Address

As recently announced by the management, Ungerer & Co., Inc. have expanded both their Chicago office and warehouse facilities in order to accommodate the company's increased business activity in that area. Effective August 29 the Ungerer Chicago office was relocated at the new address, 1415 Howard St., Chicago, Ill.

Associated Products, Inc. Moves Offices and Plant

Associated Products, Inc., has announced the relocation of their offices and plant in a new and larger building at 1479 Glenn Ave., Glenshaw, Pa. The new telephone number is HUnter 6-2255.

New location for NY Office of Archer-Daniels-Midland

The New York regional sales office of the Chemical Products Division, Archer-Daniels-Midland Co., has moved to larger quarters in the Transportation Building, 225 Broadway, New York 7, N. Y. The telephone number remains the same.

MAX FACTOR OPENS NEW HOLLYWOOD BUILDING

Max Factor & Co. formally opened the doors of its new general office and research laboratories building in August. The new $1 million headquarters for the company is located at 1655 North McCadden Place in the heart of Hollywood. The modern three-story porcelain enamel, glass and brick structure has enabled Max Factor to modernize, expand and integrate its administration and research departments for a more efficient operation. A laboratory wing on the third floor houses five separate laboratories—analytical, biological, compounding, research and perfume. Sales and administration departments are on the second floor of the intergrated structure.

The modern structure has been under construction for the past year. It was financed entirely from retained earnings.

Birthday Party Idea Rated Successful by Helene Pessl

Helene Pessl, Inc. has announced that the company's "Little Lady Birthday Party" store promotions are enjoying a banner year. A total of 38 stores are involved to date.

The parties, in connection with which Helene Pessl Inc. is now seeking a "Little Lady of the Year," are operated co-operatively between the store and the children's toiletry company. Costumes for "Little Lady Herself," refreshments, and display material are provided by Helene Pessl Inc., as is a full outline of program and procedure. Other assistance offered participating stores includes Little Lady toilet water samples, party favors, 30 minute "Little Lady Store Time" films, and $25 cash toward professional entertainment for the party.

The Little Lady of the Year, to be chosen from local Little Lady winners on the basis of an essay and photographs, will receive a modelling contract from Helene Pessl Inc. for the coming year.

Charles A. Wagner Co. Moves To New Philadelphia Quarters

The Charles A. Wagner Co. Inc., manufacturers, exporters and importers, has moved from Callowhill St. to new and larger quarters at 4455 North Sixth St., Philadelphia 40, Pa. The company was started in 1910 by Charles A. Wagner, founder and president.

Obituary

Martin Adelmann

Martin Adelmann, many years production chemist with Schimmel & Co., Inc., passed away while on a visit in Germany. Mr. Adelmann was a graduate of the University of Wurzburg and had been associated with Schimmel in New York for more than 20 years. He is survived by his wife, Mrs. Katharina Adelmann, who has been also with Schimmel as a chemist for many years.

Arthur E. Laverty

Arthur E. Laverty, the efficient executive secretary of the Toilet Goods Manufacturers Assn. of Canada, died recently at the age of 52 years. He was formerly secretary of the Proprietary Assn. of Canada.

Dr. Casper V. Casper

Dr. Casper V. Casper, formerly chemist for Charles of the Ritz, Norwalk, Conn., died recently in Colorado Springs, Colo.

Walter S. Rapelje

Walter S. Rapelje, formerly director of research and development for Colgate-Palmolive Co., died August 15 at Atlantic Beach, N. J. at the age of 73 years. Prior to coming to the Colgate organization he was treasurer and superintendent of the Kirkman Soap Co., which was purchased by Colgate & Co.

Dr. Charles J. Duca

Dr. Charles J. Duca director of bacteriology, Bristol Myers Products Division, died recently in Springfield, N. J. at the age of 49 years.

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PERSONALITIES

Herbert W. Rassmann, export manager of Dragoco of West Germany, aromatics and essential oils producers, has arrived in this country for a three months stay.

Herbert W. Rassmann

He will assist Dr. Henry Gribou, manager of the U.S. division of the company, in coordinating the activities of the U.S. division and the home office. Mr. Rassmann, who has been with Dragoco since 1948, has a wide knowledge of the perfume and flavors industries.

John A. Cawley, president of the House of Tangee, accompanied by Mrs. Cawley, made a three weeks' visit to South America. They inspected sales agencies and manufacturing plants of Tangee in Argentina, Chile, Ecuador, Colombia and Panama, returning to the United States the first week in September.

Walter C. Deakyne, Jr. has been appointed assistant general sales manager of Heyden Chemical Corp. He has been with Heyden since 1951, where he has

Walter C. Deakyne, Jr.

served as sales representative with the Philadelphia District office, southern regional sales manager, and New York sales manager.

Richard H. Boggs has been appointed export sales manager of Heyden Chemical Corp. and its Western Hemisphere subsidiary, Heyden Export Corp. Mr.

Richard H. Boggs

Boggs has been assistant to the director of overseas operations of Nuodex Products Co., a division of Heyden Chemical Corp., since he joined the organization in 1955. Previously he was associated with the American Petroleum Institute, H. K. Porter Co., Inc. and the United Nations.

Jacob Manheimer, dean of the essential oil industry in the United States, celebrated his ninety-second birthday August 16. He was born while the war between the states was still in progress and entered the essential oil business September 6, 1876. Thus he has been actively associated with the industry for 80 years. Despite his years he is very active and comes to business every day and uses airplanes frequently to make trips to visit out-of-town customers of J. Manheimer Inc., New York, in various parts of the country.

Ollie Whiteman has been appointed territory manager of the Northern New York territory for Lentheric Division of the Olin Mathieson Chemical Corp.

Dr. Jean J. Martinat who is making an extended tour of Europe, writes that Grasse, France which he visited for three days has been accommodating many tourists, 70% of which he estimates came from the United States. "Grasse," he says "is a unique, artistic, industrious and beautiful community and the people of the city are very friendly and follow a pattern of living that they do not wish to change. Moreover," he adds, "the younger American country likewise does not wish the beauty of the old world, as exemplified in the site of the floral industry in France, which plays such an important part in promoting the welfare of the civilized world, ever to perish."

Bert Sanders has been appointed personnel manager of the toiletries division of Shulton, Inc. He has been in personnel work in the industry for the past

Bert Sanders

eleven years. Mr. Sanders is a graduate of Manhattan College and he attended the School of Law of St. John's University.

Morris Levinson, president of Associated Products, manufacturers of 5-Day Deodorant Pads, has been named president of Rival Packing Co., makers of Rival Dog Food.

Jacqueline Cochran, who in private life is Mrs. Floyd Odlum, was one of the speakers at the Republican national convention in San Francisco, August 21. Miss Cochran is a candidate for Congress in California.

William Palmer has been named sales representative in the New York metro-

William Palmer

politan area for the Fine Chemicals division of Shulton, Inc. He was formerly with Chicopee Mills, Inc. Mr. Palmer is a graduate of Lafayette College.

A. Stanley Maas of Felton Chemical Co., Inc. has been transferred to the company's mid-west headquarters in Chicago.

A. Stanley Maas

A veteran of 22 years with Felton, he will cover West Michigan, Indiana and Illinois.

Steve Balkam, formerly Pacific Coast sales manager for Angelique & Co., has been elected a vice president of the company. In his new position, he will head the Pacific Coast division and oversee the company's sales management, merchandising, product development and sales promotion. Ernest Boles, formerly Pacific Coast sales manager of Sardeau Inc., succeeds Mr. Balkam as Angelique's Pacific Coast sales manager.

Philip Chaleyer who has been spending the Summer with Mrs. Chaleyer, visiting places of interest in Europe will sail for the United States September 21. While in Basle, Switzerland, Mr. Chaleyer spent a week in conference with officials of Hoffman-LaRoche Co. Writing from the Austrian Tyrol Mr. Chaleyer reports that hotels are crowded and that it is difficult to obtain accommodations, notably in Vienna. As a result Mr. and Mrs. Chaleyer omitted their planned visit to Vienna and instead went to a picturesque village near Salzburg before returning to Paris.

Arthur B. Richardson of Chesebrough-Ponds was awarded an honorary degree of Doctor of Laws by the University of Maine for his service to commerce and finance.

Jacques d'Aigremont, president of Roure-Dupont, Inc., has just returned from a visit of more than two months abroad. He commuted between his farm in Vichy, and Grasse and Paris. He brought back with him samples of the new crops of rose de Mai, jasmin, lavender and other naturals for which Roure-Bertrand Fils & Justin Dupont have been well known for more than a century. He also is most enthusiastic about the newest developments of Basodors and specialties that have been developed by technicians of the Argenteuil laboratories.

Noah M. Showe has been added to the field staff of Felton Chemical Co. He will make his headquarters in Detroit,

Noah M. Showe

and will service East Michigan, Ohio and West Virginia.

Mrs. Penelope Atsaves Wotherspoon, formerly perfumer for Faberge Inc. is now associated with the Grace Chemical Co., New York, N.Y.

Gustavus A. Pfeiffer, who died some time ago, left an estate of $11,944,739, the bulk of which was given to charity. He was president of William R. Warner & Co. for many years, and as head of Richard Hudnut was active in the toilet goods industry.

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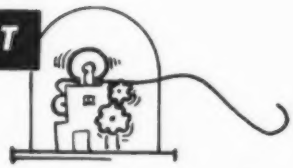

Prices Tending to More Normal Levels . . .

DEMANDS for a general line of Summer items and early preparations on the part of makers of proprietaries, pharmaceuticals, toiletries, and perfumes for the coming Fall should tend to keep essential oil and aromatic chemical sales at a good level. Labor difficulties, vacations and other outside influences have all served to make for a degree of uncertainity. The return of prices on several essential oils to more normal price levels is expected to reduce buyer resistance.

PRICE CHANGES

Advances	Current	Previous
Oil nutmeg	$8.50*	$7.50
Beeswax, crude	0.67	0.66
Carnauba wax, No. 1 yellow	$1.45	$1.39
Gum rosin, grade N, cwt.	$8.07	$7.57
Balsam, Tolu	$5.25	$5.00
Coconut oil, tanks, coast	0.11⅛	0.10¾
Copra, coast, ton	$155.00	$148.00
Tallow, fancy	0.07¼	0.06¾
Grease, yellow	0.06⅜	0.06¼
Declines		
Glycerin, crude—		
Soap lye	0.16	0.17
Saponification	0.1760	0.19
Linalool	$3.60	$4.10
Lonalyl acetate, 90-92%	$3.70	$4.00
Oil citronella—		
Ceylon	0.88	0.90
Formosa	$1.45	$1.65
Geraniol—		
Extra	$4.15	$4.50
Soap grade	$2.70	$2.85
Geraniol acetate	$3.85	$4.50
Aubepine	$2.00	$2.20
Hydroxy citronellal	$7.25	$7.75

*Nominal

Prices per pound unless otherwise specified.

TONE HEAVY IN GLYCERIN—

A break of a full cent a pound in domestic crude glycerin prices, a more competitive situation in foreign markets, and the continued high level of stocks are factors responsible for a growing feeling in the trade that there will be a general break in the domestic market over the final quarter of the year. The decline in crude prices over the past month brought the market down to 16 cents per pound for soap lye. This latter figure compares with 21½ cents per pound in force late last year.

CITRONELLA OILS WEAKER—

Prices on Formosan citronella oil lost further ground over the past month, as had been expected, in view of the low quotations that had been coming out of the primary center for October forward shipments. The oil from Ceylon likewise showed an easier tendency. Spot prices on Formosan oil dropped to $1.45 to $1.55 per pound over the past month with indications pointing to further reductions in the months ahead.

SPICE OILS MIXED—

Oil coriander displayed a rather unsettled tone due to the presence of some cheap lots in the local market, but nutmeg oil scored a further sharp advance with some dealers having moved quotations up to $10.50 per pound for limited unsold lots.

CITRIC ACID ACTIVE—

Demand for citric acid has been running at an all time high level. It has been meeting with increased favor in the food processing industry and takings for the account of beverage manufacturers have steadily mounted over the past few months. Output of citric acid salts has been placed at a total of 5,543,000 pounds over the past year. While prices have remained steady for some time, the increasing turnover of supplies has served to extend considerable firmness to the general tone.

LANOLIN SUPPLIES AMPLE—

Availability of degras or wool grease from which lanolin is made has served to keep the market amply supplied with material despite steadily increasing demands for the article. Its use in waterless handcleaners has been a factor in lifting sales although overall consumption has been steadily rising. Prices, while unchanged, have been subject to shading in some directions in the face of good supplies.

MINT OILS STEADY—

Mint oils displayed remarkable stability over the past month as distillation of new crop oils got underway. Earlier estimates this year had indicated a jump in acreage of about 10 percent. Because of a rather disappointing yield last season there has been a rather tight supply situation in high test peppermint oil for many months. Trade observers do not appear concerned over the possibility of any increase in production of peppermint and spearmint oils this year. Consumption of both items has increased and there have been occasions when spearmint was in a short supply position.

STRONG TONE IN WAXES—

The Suez crises brought a flurry of activity in some of higher grades of beeswax which in turn was accompanied by an upward trend in prices. Egyptian crude beeswax tightened and South American and other varieties were immediately affected by the stronger tone in those varieties that normally move through the Canal. Yellow grades of carnauba wax were likewise higher in price. The extended rise in prices reflected a tight supply position, a situation that has been developing for the past several months.

NEROLI, LAVENDER ADVANCING—

Prices on lavender and neroli have been edging upward. In fact the rise in neroli brought the market to a new all-time high level. The unusually firm conditions surrounding these articles fail to come as a surprise to the trade, however, in view of earlier reports that have been received here regarding crop damage.

MENTHOL QUIET—

Trade in menthol remained quiet over the past month but trade observers believe that there is a considerable amount of business to be placed in the months ahead.

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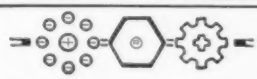

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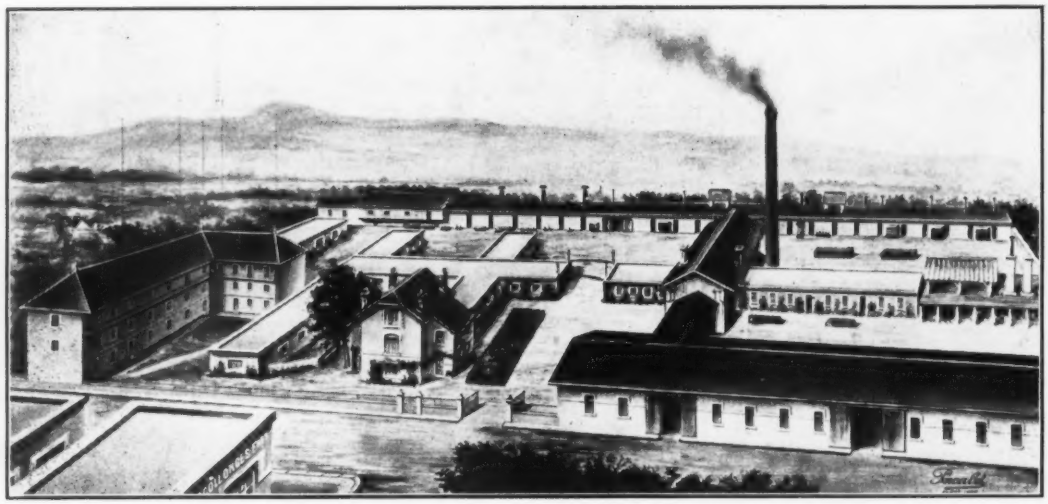

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